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HARRIS TIGH
PENNSYLVANIA

A DESCRIPTION

*To the Library of Pennsylvania
Compliments the author James
deB. R. Keim*

OF THE

CITY OF READING, *770
13*

SHOWING THE ADVANTAGES OF ITS SITUATION AS A

PLACE OF MANUFACTURE

AND ITS ATTRACTIONS AS A

PLACE OF RESIDENCE.

EXTRACT FROM THE MINUTES OF A SPECIAL MEETING OF THE DIRECTORS OF THE BOARD OF
TRADE, HELD AT THE CITY OF READING, PA., AUGUST 25TH, 1881.

Resolved, That this Board of Directors invite Mr. deB. R. Keim, of this city, to prepare a
Description of Reading, with the view to having it printed in the forthcoming report of the Board
of Trade, embracing the advantages offered by this City as a Manufacturing Centre, and as a
Place of Residence.

J. H. STERNBERGH, President

E. F. KEEVER, Secretary.

READING, PA.:

ISSUED BY THE BOARD OF TRADE,

1882.

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A DESCRIPTION OF THE CITY OF READING

AS A

Centre of Manufacture and Place of Residence.

A careful study of the topography of Pennsylvania, shows the natural arrangement of its physical features to consist of a series of parallel valleys, crossing the State from northeast to southwest, and extending from the Delaware to the Ohio. Each of these valleys is endowed by nature with distinctive resources and industries. In the valley of the Delaware, trade, commerce and manufactures predominate; between the South and the Blue Mountain Ranges, are situated the unrivalled agricultural counties of Pennsylvania; beyond the Blue Mountains, to the Broad Mountain, lie the great anthracite fields of Pennsylvania, and still beyond, on the Atlantic and Ohio Slopes of the Alleghanies, the vast areas of bituminous coals. The drainage of these valleys by the accretion of springs and rivulets pouring down the mountain sides, forms a network of streams of greater or lesser magnitude, falling into the Delaware, the Susquehanna and the Ohio, and on their way impart refreshing moisture to the soil, luxuriance to vegetation and encouragement and facilities to industrial and manufacturing development.

THE VALLEY OF THE SCHUYLKILL.

One of the largest of these tributary currents is the Schuylkill. This stream rising in the carboniferous elevations of the Kittatinny

Ridge, in Schuylkill County, released from the rugged recesses of the mountains, debouches into a valley of extreme beauty of scenery and fertility of soil. Thence pursuing its course it traverses the County of Berks, intersecting the great valleys of Eastern Pennsylvania and Lebanon, and forcing the defiles of the South Mountain Range, winds its way through a highly cultivated and populous section, embracing the Counties of Montgomery, Chester and Delaware, until it falls into the turbid flood of the Delaware at Philadelphia, a distance of 130 miles from its fountain springs.

The course of the river fringed on either side by the picturesque and highly cultivated undulations of the outlying spurs of the Kittatinny and South Mountains, forms the celebrated Valley of the Schuylkill, comprising 1,884 square miles and extending from tide water on the Delaware, into the Mountain Zone, but not across it, and spanning about one-half the breadth of the State. It is surpassed by no equal extent of territory in the Commonwealth of Pennsylvania, and perhaps in the United States, in the variety and development of its Agricultural Mining and Manufacturing Industries, the activity and enterprise, intelligence and education of its people, the beauty and every varying character of its scenery, the diversity and importance of its resources, the salubrity and healthfulness of its climate, the number and picturesqueness of its villages, and the extent and excellence of its highways, railways and canals.

At the northern end lie the famous fields of anthracite, the only deposits of mineral coal of this variety, of sufficient quantity and quality for profitable working, in the United States and representing a vested capital of upwards of three hundred million dollars in mining and transportation. At the other end, stands the City of Penn., the metropolis of the Commonwealth of Pennsylvania, with its million of human beings, its manufactures excelled in extent and variety by no other city in the United States, its vast foreign and domestic commerce, its culture, its public institutions and every other requisite of a great municipality. At the eastern extremity of the prolongation of the Valley of Eastern Pennsylvania, is New York, the commercial and financial metropolis of

the United States, and at the western termination of the Valley of Lebanon, is intersected the marvellous system of inland rail traffic of the Pennsylvania Company, which reaches out into every part of the great West.

THE COUNTY OF BERKS.

Where these great valleys unite and cross, a vast amphitheatre environed by carboniferous and metalliferous hills, spreads out over an area of 900 square miles. This territory so highly favored by locality, accessibility and resources, constitutes the County of Berks. Abutting upon its northeastern and northwestern boundaries are the coal bearing counties of Lehigh and Schuylkill, and on the southeast and southwest, respectively, the rich agricultural counties of Montgomery and Chester, and Lancaster and Lebanon.

THE CITY OF READING.

On the eastern border of this vast natural amphitheatre, stands the City of Reading, from its geographical position, the metropolis of the surrounding region, the entrepot of its numerous and varied productive industries and the seat of their attendant monetary operations.

The City lies upon the western declivity of Mount Penn, one of the outlying spurs of the South Mountain Range. The plat forms a parallelogram, with an average length of 3.13 miles, from north to south, and 2.37 miles, from east to west. The area of territory within the present corporate limits, embraces seven square miles, or 4,558 acres. This includes the River Schuylkill, the western bank of which forms the western boundary of the City. The water front on the Schuylkill, available for manufacturing establishments, is 4.82 miles. The streets range on the cardinal points of the compass, and intersect each other at right angles.

The topographical features of the city consist of a gently declining plain, beginning at the foot of Mount Penn, with that forest clad eminence in part forming a back ground on the east, and terminating at the banks of the Schuylkill, on the west. Towards the north it spreads over a broad and picturesquely undulating stretch of territory, and towards the south and east, fol-

lows the well-defined and narrow limits of the valley, which separates the Neversink Mountain from Mount Penn. The suburban districts are especially beautiful. The surface is admirably disposed for drainage, descending from the head of the main thoroughfare, Penn Street, to the Schuylkill River, 167.5 feet in a distance of $1\frac{1}{2}$ miles. The soil consists of lime-stone and gravel formations, ensuring freedom from miasmatic and other subtle and destructive agencies, which propagate and disseminate disease and death.

With respect to the outerworld, Reading is but two hours journey (58 miles) by railroad from Philadelphia, and passes through a country without a rival in beauty of scenery, extent and variety of industry and excellence of agricultural development. It is but four hours (128 miles) from New York, and has a choice of two routes of railroad communication. It is but little over an hour and a half (35 miles) from the rugged carboniferous regions of Schuylkill County, and but two hours (54 miles) from Harrisburg, through the charming valley of Lebanon.

AN HISTORICAL RETROSPECT.

The earlier history of the region now known as the Valley of the Schuylkill, shows that it was the scene of the first attempts at settlement and enterprise by the primitive colonists on the banks of the Delaware, and as the cognate advantages and resources of the country became developed, this same territory became the seat of the first industrial ventures, which are now the characteristic elements of the wealth and activity of Pennsylvania. The grant of Charles II. to William Penn. as sole proprietary of all that extensive stretch of territory embraced within the province of Pennsylvania, was an event which exerted a profound, directing and durable influence upon American colonization. In the preparation of the organic forms of his new Commonwealth, in association with his own comprehensive and progressive views on questions of government, and the economic conditions and relations necessary to a prosperous and happy people, he had the advice of many earnest friends and well-wishers in every station of life and public service. Not the least of these was the famous Sir William Petty, who wrote to the

new proprietary, "his old friend," under date London, 14 August, 1682, just after the royal grant, "my opinion is that not only Pennsylvania, but all the habitable land upon the face of the earth will (within the next fifteen hundred years) be as fully peopled as England is now, that is to say, that there will be a head for every four acres of land." * * * * Could this ancient lord of high degree return to this mundane sphere and cast his prophetic mind upon that portion of the "habitable land upon the face of the earth," the now free and independent Commonwealth, which still bears the name and honors and glorifies the memory of his "old friend," he would find himself somewhat perplexed by the contemplation of his parenthetical observation exceeded within the brief space of two centuries. Such has been the remarkable velocity of development in population and industry within Pennsylvania alone, that Sir William's sapient prognostication that it would take until the year 3182, A. D., to reach the density of "a head for every four acres of land," has been almost compassed in 1882, or in just two hundred instead of fifteen hundred years. In the county of Berks, to-day, we find "a head for every 4.6 acres of land." The attractions of scenery and climate, the mineral wealth of the mountains and the fertility of the valleys, resulted in the natural gravitation thither of a population far ahead of the wildest fancies of the ancient philosophers and economists.

The combined efforts of the early Dutch and Swedish settlers, covering a period of over four decades, 1623-1664, accomplished but little in the permanent development of the trade of the Valley of the Schuylkill. The wars of 1664 having placed the English in possession, a new era of progress at once began, and this, followed by the charter of 1681 to William Penn, set in motion a systematic course of development which was attended with marvellous results. Some idea of the extent and character of the emigration to Pennsylvania in those pristine days, may be gathered from the fact that when the founder, two years (Aug. 12, 1684) after his first arrival, returned to England, instead of the vast and uninviting wilderness which welcomed him, he left a province containing 7,000 inhabitants. Of that population, 2,500 lived in the infant metropolis at the mouth of the Schuylkill, and enjoyed a large and growing

trade with the mother country, the continent of Europe, the Antilles and South America, and 4,500 had spread out over the adjacent valleys of the Delaware and the Schuylkill.

THE SETTLEMENT OF THE REGION CONTIGUOUS TO READING.

The progress of this tide of human migration was early felt in the valley of the Schuylkill, and as it increased in volume, the advancing wave soon reached the foot hills of the South Mountain, and passing the defiles of that picturesque range, spread out over the intervening valley, until arrested for a time at the base of the rugged and sterile sides of the Kittatinny. At this time this beautiful region now in the County of Berks was within the limits of the County of Philadelphia. The picturesque Manatawny rising in the green hills of Oley and winding amid fertile undulations and mead-lands, on its way to the Schuylkill, was the seat of thriving settlements as early as 1704, and deeds were given by William Penn for lands in this region, as early as 1682, before leaving England. The first colonists to arrive were Huguenots, or French Protestants, who, fleeing from the persecutions in France, some during the reign of Queen Anne, and earlier, settled at Esopus in the province of New York, and thence removed to Berks, while others, after serving in the wars of William of Holland, Prince of Orange, which terminated in placing that Protestant Monarch on the Throne of England, also found a refuge in this lovely region. This emigration continued for fully a half a century, during which time the representatives of many families of influence, respectability and wealth here found homes free from intolerance and the descendants of these families to this day are useful and distinguished citizens. As an evidence of the character and influence of these pioneers, it might be mentioned that George de Benneville the first of the name who settled at Oley, belonged to the French nobility. Very shortly after the arrival of the Huguenots, a number of Germans of reputation and means, also driven by religious intolerance, from their homes, near the banks of the Rhine and encouraged, doubtless by the favorable accounts sent home by the Frankfort Land Company, the patentees of a large body of land on the Manatawny,

also arrived in Oley between the years 1708 and 1710, and uniting their industry and their means with those who had preceded them, laid the foundation of those thriving settlements. The French and German settlers in Oley about the year 1713 were augmented by a few families of Quakers, among whom were the Boones. Thus before 1720, this beautiful and fertile section within five miles of the "Town of Reading," laid out twenty-eight years later, possessed a permanent and thriving settlement.

THE EXTENSION OF SETTLEMENTS.

After the second great land purchase of Penn, in 1733, which included the whole of the southeastern quarter of the province, not already acquired by the "walking Purchase" (1682), emigration into that portion of the valley of the Schuylkill, between the South and Blue Mountains, received an additional stimulus. In 1738 a number of families of the Society of Friends established themselves on the banks of the Ontelaunee, (Maiden Creek) near the Schuylkill. Although there had been many settlements of Germans from the Palatinate of the upper and lower Rhine within the limits of what is now Berks County, the mass of this emigration did not fairly set in until about the year 1740. These people now flocked to Pennsylvania in great numbers and settled in every part of the county.

THE IMPRESS OF RELIGIOUS AND NATIONAL CHARACTERISTICS.

This diversified population represented an equally marked diversity of religious faith. The English and Welsh were quakers and Episcopalians, the Germans and Swedes were Lutherans, German Reformed, Dunkers and sects of the Mennonists, and the Huguenots believed generally in doctrines of the Reformed Church. Aggregately, however, there was but one common sentiment above denominational differences and that was an earnest advocacy of freedom of conscience and religious toleration. A few Roman Catholics had settled here and there in the same region but were not an important factor in population or influence compared with the followers of other religious beliefs. At Molatten where Douglassville now

stands was a Sweedish settlement as early as 1700, a favorite resort of Indians for trade, and a missionary station of the established church of England under the auspices of the London Society for the Propagation of the Gospel in foreign parts. The people generally were of humble origin, but were industrious, honest and intelligent and aggregately were fit progenitors of the race which converted the wilderness into a place of abundance, and made this region the pride of the commonwealth of Pennsylvania, in industry, beauty and affluence.

THE "TOWN OF READING" LAID OUT.

The rapid increase of population along the banks of the Schuylkill, north of the Perkiomen, and the necessity of the location of a town for the convenience of the people of this region, in matters of municipal administration, elections, and business with the courts, and to enhance the facilities of trade, induced the agents of the proprietaries to seriously consider the divers petitions which had been submitted to the government at Philadelphia. In 1733, two brothers, John and Samuel Finney, had acquired from the proprietaries 450 acres of land, situated on the eastern bank of the Schuylkill below the mouth of the Tulpehocken. The remarkable beauty of the country, advantages of location and the fertility of the soil had already been brought to the attention of the proprietaries, and the Finney tract was selected as the most desirable site for the proposed town. About 1746 efforts were made by the proprietaries' agents to secure this tract by re-purchase, but failing to accomplish their purpose, the Finney's declining to sell, Richard Hockley laid out the plan of a town on the eastern bank of the Schuylkill, north of the present location and opposite the confluence of the Tulpehocken. This movement, it appears, so alarmed the Finneys, that after some negotiations, they agreed to dispose of their tract to the proprietaries. The surveys of the first site, afterwards known as the Hockley out lots, were abandoned, and in 1748 Hockley laid out the town of Reading on the present site. The original plot embraced about 600 acres. The proprietaries thus became the private owners of the site of Reading, and disposed of lots at an annual ground rent. These claims, however, were not pressed. An attempt was made

about 1840, by the heirs, to collect the amounts due, but created so much contention that an amicable settlement could only be effected through the authoritative action of a town meeting.

As we have already observed, long before the founding of Reading, a considerable number of people had established themselves within a radius of ten miles, especially in the present townships of Amity, Oley, Alsace, Maiden Creek, Robeson, Cumru, Heidelberg and Bern, not to speak of a number of outlying settlements beyond that limit. From these hives of population and thrift people flocked into the town and became possessors of lots, built dwellings and began trade. It is true that the village of Hamburg, 17 miles distant, and near the foot of the mountains on the north, had been founded fully eighteen years before, but for some inscrutable reason it never reached beyond the character and importance of an outpost, where the white man and the Indian met for barter and trade; where the hunter received his supplies for the chase, and where the settlers rallied for defense in times of Indian invasion. The new town near the mouth of the Tulpehocken outstripped it in the first three years of its growth. To give character and encouragement to the settlement of the town, Conrad Weiser, the famous Indian interpreter and provincial agent in Indian affairs, removed from Heidelberg to Reading and erected a trading post, on a site which is now the northeast corner of Penn and Fifth streets. This ancient landmark stood for a century and a quarter, amid all the vicissitudes and developments of the city, and was destroyed by fire in 1872. The sachems of the aboriginal tribes resorted thither to meet the provincial representatives and to negotiate treaties. The Indian hunter pitched his wigwam on what is now Penn square, and bartered his peltries for the commodities of the white man.

THE CHARACTER OF THE FOUNDERS OF READING.

The population and language of the town were German. The great influx of a foreign population, and especially Germans, who far exceeded the aggregate emigration of all other nationalities, gave the ruling class, the Quakers, grave apprehension, and at one time measures to arrest the tide were seriously contemplated. It was complained among the friends of the Penns,

that the character of the population was such that Pennsylvania had the appearance of a German province. The new town on the Schuylkill was illustrative of this fact. The names which appear in the list of its first taxables were almost exclusively of German origin, mainly from the kingdoms of Wurtemberg and the Palatinate. Their manners, customs and language, were imported from the banks of the Main, the Neckar and the Rhine. A handful of English Quakers, in the interest of the proprietaries, had settled there and had control of the affairs of administration, but were in numbers so small and influence, apart from their association with the government, so unimportant, that Reading was soon regarded as the metropolis of the German settlers of Pennsylvania, and as representing the intelligence, affluence, tastes and enterprise of that thrifty and large element in the population of the colony. In addition to the activity and sterling qualities of the people themselves, the agents of the proprietaries took a deep interest in the success of the new settlement. The founding of no town in the Province, since the great Penn himself had given his personal supervision to the laying of the foundations of the metropolis, at the mouth of the Schuylkill, attracted so much attention as Reading. The proprietaries' agents published it as possessing "great natural advantages of location and destined to be a prosperous place." Under such favorable auspices, it is therefore not surprising that the growth of Reading was unparalleled in the history of inland towns in the Province.

THE COUNTY OF BERKS ORGANIZED.

The rapid and continued increase of population in the town and surrounding country was such, that but four years later the inhabitants of this region renewed their petition to the Provincial Assembly (Feb. 4, 1752), at Philadelphia, praying that "some part of the counties of Philadelphia, Chester and Lancaster be erected into a separate county," "with the same privileges that other counties enjoyed and that the seat of judicature be fixed within the said town of Reading." At this time the county of Philadelphia extended indefinitely towards the northwest and along the eastern bank of the Schuylkill, which stream separated it from the County

of Chester and the more recently constituted County of Lancaster.

The capital town having received the name of Reading, the proprietaries, in pursuance of their predilection for the nomenclature of their native land, gave the county the name of Berks, the City of Reading being the shire town of Berks in England.

In the year the county was created, the town of Reading contained 130 dwellings, 41 stables and 106 families, aggregating 378 persons. The year before it contained but a single house. The county at the same time had a population from 6,000 to 8,000 inhabitants.

PEACEFUL DEVELOPMENT RETARDED BY SAVAGE INVASION.

The defeat of Braddock on the banks of the Monongahela, had thrown the entire frontier of Pennsylvania open to the predatory operations of the savages of the headwaters of the Ohio. The scalping-knife and the rifle had carried their work of murder and devastation eastward across the mountains and descending into the fertile valleys of the Juniata, the Susquehanna and the Schuylkill, the relentless foe spared neither age nor sex. The townships of Bethel and Tulpehocken were overrun. The houses and crops of the settlers were given to the torch, and the people to the tomahawk.

For purposes of defense, Fort Henry was erected in 1754, on the west branch of the Swatara River, in Tolheas Pass, at the eastern base of the Kittatinny Mountains near where Jonestown now stands. A short distance east of Fort Henry, stood Siches or Sixes Fort, on the headwaters of the Swatara, and on the summit of the mountain, in the Schuylkill region was Dietrich Snyder's Fort.

In November, 1755, in Tulpehocken, eighteen miles distant, about thirty of the settlers had a severe encounter with the enemy and the people in Reading itself alarmed by the proximity of the foe, mustered for the conflict. The drums beat to arms, the ringing bells and martial alarms aroused the town to a sense of the proximity of danger, and summoned the people to the defense of their homes. For several months armed citizens patrolled the streets and kept their warlike vigils towards the Tulpehocken and the Ontelaunee.

A detachment of eighteen men from the militia soldiery of Reading, marched to the reinforcement of Fort Henry, and scouting parties scoured the country towards the mountains. Thus from 1755 till 1764, when Colonel Bouquet invaded the country and routed the savages west of the Ohio; the frontiers of Berks were the scene of constant alarms and too often murders and pillage. The settlements were broken up, buildings were destroyed and stock driven off and the development of that whole region retarded. This unsettled state of affairs lasted until after the massacre of Wyoming in 1778, when the tide of savage invasion was driven back over the Alleghanies never to return. Notwithstanding the unhappy condition of affairs in the northern sections of Berks, the lower townships and the town kept pace with the steady growth of the older counties of the Province.

THE CAUSE OF LIBERTY AND INDEPENDENCE.

The inhabitants of Berks were in nowise dilatory in their duty to the cause of freedom. When the clash of arms on the Green at Lexington and the cannon of Bunker Hill aroused the American people to their danger, and the Declaration of Independence formulated the principles upon which the conflict was to be fought, the patriotic sons of Berks were foremost in their zeal for the cause. One of its representatives in the Provincial Assembly, Edward Biddle, was a member of the first Continental Congress, and others figured with equal conspicuousness in the cause of patriotism.

At the time of the severance of political relations with the Crown (July 4, 1776), and proprietaries (Sept. 26, 1776), the new commonwealth of Pennsylvania contained over 300,000 inhabitants, nearly 15,000 dwelling in the County of Berks. There were 10,000 troops in the field, of which Berks always furnished the full quota required by the Committee of Safety, and besides had an efficiently organized force of militia ready to obey at a moments call, every summons to the field.

READING A DEPOT AND PLACE OF MANUFACTURE OF MILITARY SUPPLIES.

During the revolutionary conflict Reading was a depot of munitions of war, for the army operating on the lower Schuylkill. As

early as 1776 its foundries were busily engaged in filling orders, from the Assembly of Pennsylvania, for cannon, and had in that year furnished not less than fifty of 12 and 18 pound calibre. During the entire war, cannon and shot and shell by order of Congress were cast for the use of the Continental army, at Reading and in the County of Berks. Several orders for firelocks were also filled from the workshops of Reading.

READING A BOROUGH.

Notwithstanding the existence of an exhaustive war and the gloom, uncertainty and at times, desperation which invested the issue, the little German town on the banks of the Schuylkill, made constant and steady gains in population, wealth and industry. The demands of trade had led to the opening of roads to all points on the main thoroughfares of trade, which greatly extended its influence.

Within the brief lapse of three-and-a-half decades, Reading had assumed sufficient importance, as a centre of population and trade, to aspire to the dignity of a borough possessed of four places of public worship, a court house and a jail, and several thousand inhabitants. This stride in the march of progress was consummated on September 12, 1783, when an act of incorporation was passed, entitled "an act for erecting the town of Reading, in the County of Berks, into a borough, for regulating the buildings, preventing nuisances and encroachments on the squares and streets, lanes and alleys of the same, and for other purposes therein named." The borough limits extended the area of the town to 2,194 acres, which constitute the heart of the city of to-day.

THE GROWTH OF READING IN POPULATION.

In 1748 Reading contained one house. In 1752 the population numbered 378, and in 1769 about 1,200 inhabitants, which included 223 married and 18 single persons. The first census of the United States taken in 1790, just seven years after the incorpora-

tion of Reading as a borough, gives 2,235 inhabitants. At the same time the County of Berks had 27,010 inhabitants.

During the next three decades we find a steady forward movement in the growth of the borough, superinduced by the expansion of industries, the occupation and cultivation of the fertile soil in the adjacent parts of the county and in the working of new mines of iron ore, which had been discovered, or opened in the vicinity. In 1820 the city had reached 4,330 inhabitants. This growth, nearly one hundred per cent. in thirty years was remarkable, as it was the result of no spasmodic enterprise, nor exceptional conditions, such as have often caused a sudden start in the growth of communities, only to be followed by reaction, but a steady, irresistible and wholesome development, governed by proper economic influences and relations and the growing importance of the town as a centre of trade and industry.

The next three decades found the borough advancing in a largely increased ratio. The development of population, enterprise and wealth moved forward with accelerated pace. The construction of railroads and the introduction of other improved appliances of modern industry, trade and transportation, stimulated by the industrial activity of the borough and surrounding region, also contributed to the general development.

By 1840 Reading had reached the distinction of being the largest borough in the United States. The compact portion of the town then extended from the Schuylkill eastward, to the foot of Mount Penn, at Twelfth Street, a distance of more than one mile; and from Chestnut to Walnut Streets northward, fully one-half mile, and for the convenience of municipal administration, had been divided into four wards, or quarters, by the intersection of Penn and Fifth Streets. About the year indicated, the borough also received a decided impetus in manufacturing development. The completion of the railroad and other advantages led to the establishment of several important iron industries on the banks of the Schuylkill, in the southern part of the town. These naturally attracted thither a considerable population of mechanics and laborers, and soon the growing fields which stretched from the railroad to

the river, were dotted with the domicils of this useful class of citizens.

READING A CITY.

A rapid influx of population followed in the wake of these new industries. In 1847 the enterprising community on the banks of the Schuylkill took another step forward in the march of progress by advancing to the full grade of a municipality. By an act of the Legislature of Pennsylvania, dated March 16, 1847, "the Borough of Reading in the County of Berks," was "constituted a corporation and body politic by the name and style of the mayor, aldermen and citizens of Reading." The act of incorporation, in the usual verbose and technical style of such instruments, invested the city with all the powers and privileges incident to a municipal organization, five wards were created and provisions made for the election of a Mayor, members of a Select and Common Council, Aldermen, Constables and such other designated officers as were essential to the administration of every branch of municipal authority.

Three years, 1850, after the incorporation of Reading as a city the census of the United States, represented the population at 15,743 souls, an increase of over 363 per cent. as against 100 per cent. in the same period 1790-1820 preceding.

POPULATION IN 1880.

A positive relative increase in population, showing the steady development of the city in trade and industry, also attended the lapse of years from 1850 to 1880, but the ratio of increase was less, being about 274 per cent. The United States census of 1880 showed the total population in that year to be 43,280 souls.

As follows: males, 21,105; females, 22,175; or by nativities, native, 39,656 foreign, 3,624; or by race, white, 42,928; colored, 352. At the same time the County showed a corresponding increase, aggregating 122,599 inhabitants.

This contiguous region ranking 16 in area and 6 in the number of inhabitants in the commonwealth, might be regarded in many respects, as practically an integral part of the city. We find included in this aggregate no less than nine boroughs ranging in

population from 198 to 2,010 inhabitants, and each the seat of some special industries or interests, and the entire number tributary to the mercantile and manufacturing prosperity of the city. For instance, Birdsboro is the seat of furnaces and nail works, the latter among the most extensive in the State; Boyertown is the centre of vast operations in iron-ore mining; Hamburg, the oldest community in the County, has iron works; Wernersville has several popular summer resorts; Kutztown has its State Normal school and valuable industries; Fleetwood, Topton and Womelsdorf are important railway stations, with large industries and situated in the midst of a fertile agricultural region.

In the County are also numerous villages dependent upon Reading for their supplies. There are no less than forty-nine of these small communities ranging from 46 to 1,196 inhabitants, such as Amityville, 188; West Leesport, 388; Freystown, 92; Millersburg, 349; Morgantown, 166; Marysville, 122; New Berlin, 209; Goughlersville, 75; Mohnsville, 267; Shillington, 136; Stonersville, 87; Lenhartsville, 161; Smithville, 50; Robesonia, 184; Robesonia Furnace, 156; Seisholtzville, 82; Schaefferstown, 83; Farmington, 74; Mertztown, 99; Shamrock, 135; Blue Marsh, 134; Brownsville, 65; Blandon, 376; Molltown, 69; Stouchsburg, 356; Bowdler'sville, 192; Coffeetown, 155; Lyons, 458; Maxatawny, 1,196; Rothrocksville, 104; Friedensburg, 379; Bernville Village, (in Penn Township) 164; Mt. Pleasant, 188; Shoemakerville, 429; Mt. Selem, 195; Virginsville, 46; Walnuttown, 141; Benderville, 66; New Jerusalem, 89; Stony Point, 50; Fritztown, 83; Sinking Springs, 517; West Reading, 170; Mt. Ætna, 304; Rehrersburg, 366; Bern, 58; Shartlesville, 212; West Hamburg, 148 and Strausstown, 310.

At most of these points have been established furnaces, bloomeries, hat factories, fulling and grist mills and other manufacturing industries, which further contribute to the industrial interests of Reading, and in fact are practically part of the city.

It will therefore be seen that the City of Reading, besides being an important factor in the industrial activity of the commonwealth, is surrounded, by an extensive region, unequalled in fertility of soil

and variety of resources, inhabited by an energetic and enterprising population and capable of indefinite industrial expansion.

. COMPARATIVE GROWTH.

As compared with the full list of principal cities in the United States, having a population of 10,000 and upwards, Reading apparently lost five numbers during the decade from 1870 to 1880. In 1870 it was the thirty-sixth city in size, and in 1880 the forty-first. A comparison however, of the lists of the two census years named, demonstrates that Reading not only held its own in its position in the matter of population relative to the cities in the schedule of 1870, but made a gain over two cities. The beautiful and thriving City of Hartford, Conn., for instance, ranked number 34 in 1870, and 42 in 1880. Memphis, Tenn. ranked 32 in 1870, and 54 in 1880, Reading as stated ranking 36 in 1870 and 41 in 1880.

In the race of population, the cities which outstripped Reading, were Kansas City, Missouri; Columbus, Ohio; Patterson, New Jersey; Toledo, Ohio; Fall River, Massachusetts; Minneapolis, Minnesota and Nashville, Tennessee. In examining the causes of this abnormal growth, for so it must be regarded, viewed in relation to the average rate of development in the United States at large, it is discovered that in the cases of Kansas City and Minneapolis, the increase of population was the result of emigration superinduced by the depression of business in Pennsylvania and the other older states. The growth of Nashville, was the result of a sudden rise of industry, after the long disorders of the rebellion, 1861-'65. The increase of Columbus, Patterson and Fall River was the logical sequence of the introduction of new industries and the erection of extensive establishments for their accommodation. The rate of increase of Reading, however, was exceptionally large, the aggregate population in 1870 being 33,930, and in 1880, 43,280 an increase of over 27 per cent.

THE CHARACTER OF THE POPULATION.

Although the manners and customs of the citizens of Reading still retain all the characteristics of their German ancestry, the

population of native born residents is largely in the ascendancy. It has been observed that those of foreign birth number but 3,624 souls, out of an aggregate of 43,280 or less than one-twelfth of the whole. The colored population is also small, numbering but 352. There are but few cities of any note in the United States with such a small population of foreign-born citizens. This is the more extraordinary in the case of Reading, as it has always been regarded by the outside world, on account of the language and habits of the mass of the people, as practically a foreign city. It is true that the people cherish the memories and language of the fatherland, but as has been seen the controlling German element of Reading is native born, the pure and unadulterated Pennsylvania German stock. The infusion of foreign population has generally been of kindred, by ties of affinity or nationality, which renews the blood and contributes to the preservation of that identity of national origin which has always been one of the chief characteristics of the Pennsylvania German of Berks. The minglement of nationalities has been the pre-eminent cause of the proud position which the county now holds in industrial affairs in Pennsylvania. The best qualities of the Teuton, the Anglo-Saxon, the Gaul, and the Celt united on its soil in the early days, and transmitted to their descendants the habits of industry and zeal, which are so conspicuously characteristic of the generation of to-day.

WEALTH, TAXATION AND PUBLIC INDEBTEDNESS.

The material development of the County of Berks and City of Reading preserved a proper relation to this succession of continued advancement in population. There were very few, if any, counties or cities in the United States, that presented during the census year of 1880, so favorable an exhibit of the relations of the vital questions of wealth, taxation and public indebtedness. While cities in other parts of the country had multiplied their liabilities and were forced to impoverish the people by a rate of taxation amounting almost to confiscation, in order to avoid public bankruptcy, the City of Reading, by a watchful and conservative policy, in municipal affairs, avoided the dangerous extreme of unwarranted expenditures from any cause, or for any purpose. The interests of

capital and labor, the prosperity of the industries of the city, and the large number of operatives dependant upon them for the necessities of life, have always exerted a favorable influence upon the administrative authorities. A stimulus based upon a guarantee of a low rate of taxation and a judicious expenditure of municipal revenues, has thus been given to enlarged enterprise and increased investment, and as a consequence there has been a corresponding extension of the field of profitable employment of the working classes.

According to the returns of the United States census of 1880, for the County of Berks, including the City of Reading in the State of Pennsylvania, the valuation of the taxable real estate, was \$51,985,402 and of the taxable personal property, \$4,384,831, making a total valuation of real and personal property, \$56,366,233. The value of occupations at the same time aggregated \$2,965,480, making a grand total of the wealth of the county, \$59,331,713, or a *per capita* average of \$483.94.

The proportion of these amounts which represented the wealth of the City of Reading was as follows :

Assessed valuation of real estate, \$17,397,467 ; assessed valuation of personal property, \$569,441 ; total valuation of property, \$17,966,908 ; valuation of occupations, &c., \$1,376,950, making a grand total of wealth, \$19,343,858, or an average of \$415.13 *per capita*.

One fact is conspicuous to the careful observer of these figures, that is the favorable proportion of the wealth possessed by the county. This not only shows that the material development is not alone, as in so many instances, confined to the city, but is distributed in fair proportion, based upon the relative numbers in population and that the region contiguous to Reading has also been brought up to the highest stage of industrial development.

THE FINANCES OF THE CITY IN 1881.

The report of the City Comptroller for the fiscal year ending December 31, 1881, affords not only a gratifying showing of the public indebtedness and taxation of the City of Reading for that year, but presents an exhibit which must address itself directly and

favorably to the attention of capitalists desiring sites for the erection of industrial establishments, or in search of other fields of investment. It will be seen that the municipal administration has continued wise and economical, that assessments are moderate, that the rate of taxation has been maintained at a minimum figure, and that the reckless expenditures and the consequent ruinous taxation of many other cities, does not exist in the management of municipal affairs. Therefore capital continues to have every guarantee of protection against the rapacity of all kinds of combinations of designing men to further schemes of abstracting exorbitant sums from the City Treasury in payment of inferior work.

The statement of the City Treasurer in account with the City of Reading, exhibits the finances for the fiscal year named, as follows :

DR.

Jan. 1, 1881.	To balance in Treasury.....	\$ 39,504 60
Dec. 31, 1881.	To receipts from all sources to date.....	146,125 33
	Total.....	<u>\$185,629 93</u>

CR.

Dec. 31, 1881.	By payment of Warrants and Coupons.....	\$140,996 78
	By amount placed in Sinking Fund.....	5,628 68
		<u>\$146,625 46</u>
Jan 2, 1882.	Balance in Treasury.....	39,004 47

The City Sinking Fund consists of an annual credit equal to $\frac{1}{4}$ mill on the assessed value of property.

The resources of the City, Jan. 1, 1881, aggregated.....	\$1,125,207 47
The liabilities, July 1. 1881, aggregated.....	636,056 99
The actual debt, City and Water Jan. 2, 1882 was.....	<u>\$619,501 10</u>
Showing a reduction during the year 1881 of.....	<u>16,555 89</u>
The Water debt, Jan. 1, 1881 was.....	\$512,500 00
The Water debt, Jan. 2, 1882 was.....	<u>502,500 00</u>
Decrease during 1881.....	<u>\$10,000 00</u>
The total City and Water debt Jan. 1, 1881 was.....	\$1,148,556 99
The total City and Water debt Jan. 2, 1882 was.....	<u>1,122,001 10</u>
Decrease City and Water debts 1881.....	<u>\$26,555 89</u>

It will have been seen that nearly one-half of the aggregate indebtedness of the City, was incurred in increasing the supply of water to meet the requirements of enlarged population and industrial operations.

The valuation of property in the City for the year 1881, was as follows:

First-class Tax Rates, 8 mills.....	\$ 7,135,544 00
Second-class Tax Rates, 5½ mills.....	13,877,975 00
Third-class Tax Rates, 4 mills.....	1,501,196 00
Total.....	<u>\$22,514,715 00</u>

The total amount of tax on this valuation including \$1,664 50

Single Men's tax, was.....\$138,747 07

It will be observed that the census valuation of property in 1880, falls about three million dollars short of the assessment of the City. The latter may be regarded as the natural increases of property and appreciation of values during the interval indicated.

The present bonded indebtedness of the City matures at intervals during a period from 1883 to 1904, and the water debt between the years 1885 and 1899.

FINANCES OF THE COUNTY.

Prior to 1872 the County of Berks had no indebtedness. In that year a loan of \$1,900 was issued which from various sources increased from year to year reaching its maximum, \$276,173, in 1878. On Jan. 1, 1882 the County debt was \$184,604.38, or but \$1.50 *per capita*.

RECAPITULATION OF INDEBTEDNESS, CITY AND COUNTY.

The final report of the census of 1880 gives the following flattering condition of public indebtedness of the City and County in that year considered with reference to material wealth and population.

BERKS.	BONDED.	FLOATING.	GROSS.	SINKING FUND.	NET.
Total.....	\$1,202,195	\$182,240	\$1,384,435	\$135,700	\$1,248,735
County Debt.....		180,000	180,000		180,000
Township Debt.....	3,361	1,640	5,001		5,001
School District Debt.....	52,284		52,284		52,284
City and Township Debt....	1,146,550	600	1,147,150	135,700	1,011,450
Reading	\$1,134,700		\$1,134,700	\$135,700	\$999,000
Hamburg	4,500		4,500		4,500
Kutztown.....		600	600		600
Boyertown	4,500		4,500		4,500
Womelsdorf.....	2,850		2,850		2,850

THE ADVANTAGES OF READING

AS A

MANUFACTURING CENTRE.

We have now reached a point in our narrative of the foundation and subsequent progress of the City of Reading, in population and importance, which sufficiently demonstrates that the character of the people, who first established themselves on the fertile valley lands and hillsides along the Schuylkill and its tributaries, within the limits of the county of Berks, was such as to guarantee the highest development of the varied and valuable physical resources of that favored region. The same indomitable energy and habits of industry and thrift, have not only been perpetuated by their descendants, but with the infusion of new blood, into the population, from other localities, and the introduction, perhaps of a more aggressive spirit superinduced by outside capital and labor mingling with home wealth and skill, the city has won for itself a prominence in industrial affairs unrivalled by any city of equal population in the United States. We have noted the material wealth of the region of which Reading is naturally the metropolis; the proximity of the city to the great industrial and financial centres, and the principal markets of the country; its superior geographical location, with reference to trade and manufactures; the pre-eminent advantages of the site for mechanical industries; the activity and enterprise of the early settlers in every industry, which to-day makes the Commonwealth of Pennsylvania powerful and prosperous; the growth in population, wealth and enterprise, and the steady march in prosperous development from a thriving village in 1750, to a borough in 1783, and a city in 1847, and

to-day presenting the most favorable conditions and relations of population, wealth, industry, taxation and public indebtedness.

READING AS A RAILROAD CENTRE.

In this age of industrial advancement the scope of development is measured almost entirely by the question of transportation and freights. The contiguity of super-abundant resources, or the skill of man would be valueless without the facilities of reaching the points of consumption, or of distribution, to meet the demands of the market. Therefore the problem of transportation and freights is the vital question with any city and especially so to a competitor for the establishment and successful operation of mechanical industries.

As a railroad centre the City of Reading is unrivalled in proportion to population in the United States. Its facilities for the transportation of merchandise, raw materials, and the productions of mechanical enterprise, and mining and agricultural industries are in fact more extensive than those afforded by other cities even of vastly greater population. The system of Railroads owned, leased or controlled by the Philadelphia and Reading Company, not only reaches from Reading, every portion of the productive valley of the Schuylkill, but brings its manufacturers, merchants, miners and other shippers or receivers of freight within ready communication of the principal seaports for foreign shipments and all the great lines of inland transportation to the entire west, northwest and northeast, at minimum rates, and which will compare favorably with prevailing rates from seaboard cities. To interior territory and the east, the rates of transportation are equally as low, or even lower than from the trade centres in other sections of the State of Pennsylvania.

While Philadelphia is the seat of the principal offices of the Philadelphia and Reading Railroad Company, Reading is the chief point of local administration, and also the seat of the entire mechanical department. It is also the centre of radiation of the most important branches of the road and through the city the great bulk of its traffic passes.

The completeness of the facilities afforded for shipments to, and from Reading, by the Philadelphia and Reading Railroad, can best be judged from a succinct statement of the enormous extent of its operations, as a transporting line. No event in the long period of industrial and material expansion in the valley of the Schuylkill, and especially in the City of Reading, was more conducive to the highest degree of industrial development than the construction of this line of road from tide water on the Delaware at Philadelphia, to Reading, and thence to the anthracite coal fields of Pennsylvania. This Company received its charter from the Legislature of Pennsylvania as early as 1833, and was opened to Reading in 1838. It was therefore one of the very first enterprises of the kind chartered and constructed in the United States. Between the years 1828 and 1833, the American system of railroads, now so vast in its extent and operations was inaugurated. Two years after the completion of the Reading Road, 1840, there were but 2,818 miles of railroad in the entire country.

In 1838-42 the Philadelphia and Reading Railroad was extended to Mount Carbon, the first through trains running in the latter year, thus forming an outlet for the immense anthracite coal traffic of that region. From this small beginning of 94 miles of trunk line, this company keeping pace with the demands of trade and travel, has so extended its ramifications by construction and alliances, that the aggregate length of road under its jurisdiction in 1881 was 846.3 miles, namely, owned, main line 98.4 miles, branches 228.6 miles, leased 453.3 miles, and controlled 66, making a grand total as above stated.

THE EXTENT OF THE FACILITIES OF TRANSPORTATION OF READING.

The railway system of Reading, over these main and subsidiary lines, therefore offers to manufacturers, as terminal points on the seaboard, on New York waters, via the Delaware and Bound Brook Railroad and Central Railroad of New Jersey, New York City, Hoboken, Jersey City, Communipaw, Elizabethport and Perth Amboy ; on the Delaware River at Philadelphia via the main line, the Reading Company's railroad piers at Port Richmond, where the

enormous tidal traffic of the Company is handled and via the Philadelphia and Chester Branch Railroad, to tide water on the Delaware River, at the important City of Chester. At the same time in the heart of the City of Philadelphia depots have been established for local deliveries.

In connection with Pittsburgh and the west, via Harrisburg by way of the Lebanon Valley Branch, through transportation and rates are offered over the vast system controlled by the Pennsylvania Company. To the northern chain of lakes and the west, similar facilities and seaboard rates are offered over the railroads operated in connection with the New York Central and the New York, Lake Erie and Western Railroads.

In making these connections, the Philadelphia and Reading Company offers to manufacturers the following fast freight lines, with which it has working arrangements and rates to and from Reading.

In alliance with the PENNSYLVANIA RAILROAD, The Star Union Line, National Line, Anchor Line (Lake via Erie) and Empire line.

Over the NEW YORK CENTRAL ROUTE, the Canada Southern Line; Blue Line; Red Line; White Line and Western Transportation Line, (Lake via Buffalo.)

Over the ERIE ROUTE, the Erie and North Shore Line; Great Western Dispatch; Erie and Pacific Dispatch; South Shore Line; Commercial Express and Union Steamboat Company (Lake via Buffalo.)

In addition to the facilities of merchandise transportation, the Company has under its management a system of Express transportation, extending from Reading to all points on its own roads and has arrangements to receive packages from, and to forward by outside companies. For light and valuable, or perishable freight, for quick delivery, the Company's Express facilities from Reading are not inferior to those of any other city in the United States.

The merchandise freight of the Reading Company is the least part of its tonnage. Its chief business is the transportation of coal from the first and second anthracite fields of Pennsylvania to tide water in the Delaware at Port Richmond, Philadelphia and on

New York waters at New York and adjacent cities. The demands of this immense and growing traffic have been the immediate cause of the enormous expansion of capacity of transportation. The City of Reading has the direct benefit of all the facilities of transportation thus afforded. The endless trains passing down and returning pass Reading, and there receive their orders and supplies. About one-third of the entire anthracite coal production of the United States is transported by way of Reading from the mines. A large quantity of the semi-bituminous coal produced in Central Pennsylvania also reaches the market via Harrisburg and Reading.

As an additional illustration of these enormous facilities, it is only necessary to state, that no less than eighty-seven blast furnaces engaged in making pig iron and using anthracite coal for fuel, are reached directly by the railroads centring in the City of Reading, in addition to twelve furnaces, within this same area of territory, for manufacturing pig iron, with charcoal as fuel, which are in communication with Reading by public highway concentrating there, or through other stations on the railway.

THE MECHANICAL POWER OF THE READING COMPANY.

The direct relation of the industrial interests of Reading to the capacity of the Philadelphia and Reading Company for transportation of merchandise and other freights, gives the following statement of its vast and unrivalled mechanical power and resources, relevancy in this connection.

	MILES.
Total length of line owned, leased or controlled-----	846
“ “ second track-----	306
“ “ sidings, &c-----	556

Total length of track-----	1,708

This includes through lines to Philadelphia, Port Richmond, (Philadelphia), New York, Harrisburg, Pottsville and Williamsport and the tributary lines, connecting industrial centres and establishments with the main line.

At the Port Richmond terminus are spacious wharves, with 35 miles of track for the discharge of coal into vessels.

The rolling stock, November 30, 1881 consisted of 508 locomotive engines of all classes, and a grand total of 22,738 cars. The floating stock November 30, 1881 consisted of 14 steam colliers with a carrying capacity of 15,600 tons. The traffic returns and finances of the Company exhibit a degree of activity and revenues, commensurate with the immensity of its operations.

THE ALLIANCE WITH THE NEW YORK CENTRAL.

The relations with the Central Railroad Company of New York will vastly extend the facilities of direct transportation between Reading and terminal points. The arrangements which have been entered into with that Company, coupled with the completion of the Pine Creek connection, results practically in the creation of a mutually advantageous combination, whereby it becomes the interest of the New York Central to co-operate with the Reading, in the establishment of favorable rates upon the traffic from interior Pennsylvania, to all of the large towns located upon the New York Central system of railroads in the State of New York and the west. The City of Reading, therefore, instead of being a way-point upon a local road, which at times has rendered it impracticable to determine the through rates, becomes a main point upon a through line, hence, whatever advantages arise in connection with this new line, upon traffic to and from the seaboard and interior New York and the west, will be applied as well to Reading. In other words a new trunk line has been created from the Lakes to Philadelphia, via Reading. It is also the purpose and at the same time to the interest of the new line, to cultivate trade by this route and Reading will possess thereby all the advantages supposed to exist upon traffic passing to and from the seaboard cities.

THE TRAFFIC OF THE CITY OF READING.

Of the enormous aggregate amount of material transported, the proportion of the general traffic tonnage received at and sent away from Reading, by all the railroad and canal lines of the Company for the year 1881, was :

Received 1881, 950,000 tons, showing an increase of tonnage received at Reading in 1881, over that received in 1876, of upwards of 100 per cent.

Shipped 1881, 440,000 tons.

Of the aggregate freight received at Reading during 1881, the proportion of merchandise and coal tonnage, was: anthracite and bituminous coals 312,000 tons. Merchandise 638,000 tons.

These figures show the large amount of merchandise received at Reading, much of which is raw material, afterwards reshipped as manufactured articles. (For statement of traffic during a series of years, see Traffic Statement No. 2, Report of Committee on Statistics.

THE CHARACTER AND AMOUNT OF FREIGHTS AND TRAVEL.

The description of tonnage for 1881 shows the character of freights which pass over the Company's lines, mostly through and largely from Reading.

	Tons 2000 lbs.
Anthracite Coal-----	8,048,604
Bituminous Coal-----	370,288
Petroleum and other Oils-----	422,200
Pig Iron-----	542,069
Railroad Iron-----	282,054
Other Iron or Castings-----	462,921
Iron Ore-----	912,871
Other Ores-----	10,051
Stone and Lime-----	642,631
Agricultural Products-----	1,197,862
Merchandise and Manufactures-----	528,048
Live Stock-----	56,430
Lumber-----	451,857
Other Articles and Express Goods-----	456,824
	<hr/>
	14,384,710

Company's Material.

Merchandise -----	849,417
Anthracite Coal -----	616,275
Bituminous Coal -----	5,632
	<hr/> 1,471,324

15,856,034 tons.

The number of passengers carried during the same period, was 10,561,853.

Of the aggregate paying tonnage of iron and general merchandise 5,513,618 tons, which is exclusive of coal and petroleum not produced in Berks County, the City of Reading contributed 1,390,000 tons inward and outward freight or about 25 per cent.

OTHER RAILROAD FACILITIES OF READING.

In addition to the almost unlimited facilities of transportation, afforded by the Reading Railroad Company, to the manufacturers of the City of Reading, the Wilmington and Northern, originally the Wilmington and Reading Railroad, extending from Birdsboro, Pa. to Wilmington, Del., 63½ miles, opened in 1870, and connecting from Birdsboro with Reading by a branch seven miles long, opened in 1874, gives Reading a direct line to tidewater at Wilmington, on the lower Delaware. This road inaugurated as part of a through line from Wilmington to the Lehigh coal fields by the Berks and Lehigh, now the Schuylkill and Lehigh Railroad, chartered in 1870 and finished in 1874, 41.20 miles, was shorn of a large trade by the lease in 1875 for 99 years to the Reading Company, thus absorbing the connections beyond Reading. The line running south from Reading does a good business and gives the manufacturer points of distribution of merchandise in a section of Pennsylvania and the State of Delaware, not reached by the extensive system under the administration of the Reading Company.

PROJECTED INCREASE OF THE RAILROAD FACILITIES OF READING.

The immense value of the trade of the City of Reading and the contiguous territory, notwithstanding the extended facilities already

enjoyed is further indicated by the fact that no less than three new lines of railroads have been chartered for the purpose of participating in the enormous mining, manufacturing and agricultural resources of the region of which Reading is the metropolis.

The first of these, the Oley Valley and Lehigh Railroad Company chartered in 1882 was a most important step in the industrial interests of the City of Reading and the County of Berks. The completion of this enterprise tapping one of the richest sections in the county will bring Reading in communication with a new field of industrial activity.

The route of the new road leaving the main line of the Reading Railroad near Birdsboro station, Exeter Township, runs northeasterly entering the Oley Valley at Stonersville, and thence by way of Pleasantville and Rittenhouse Gap, to Seisholtzville, in Hereford township, a distance of 25 miles. At the latter point are the valuable ore tracts of the Philadelphia and Reading Coal and Iron Company. This line will also constitute a connecting link in the establishment of a through route from the Lehigh anthracite coal regions, to tidewater at Wilmington, Del. The distance from Reading to the point of departure of the Oley Valley Railroad is but 9 miles.

The second of these new projects, is known as the Reading and Chesapeake Railroad Company chartered in 1881. The objective point of this line is the waters of the Chesapeake Bay, at Havre de Grace, Maryland, situated at the embouchure of the Susquehanna River, a distance of 60 miles, with a branch line of 20 miles to Lancaster, Pennsylvania. This line, leaving Reading takes a southerly course through New Holland, Straussburg and Quarryville, the famous Conestoga Valley in Lancaster County, and reaching the Susquehanna, follows the eastern bank of that broad and picturesque stream, to a point of intersection of the Philadelphia, Wilmington and Baltimore Railroad, with which, and the Pennsylvania Railroad system, it will connect at Perryville, Maryland. Extensive shipping wharves will be constructed on the Chesapeake Bay at the terminus of the road. This route will give the industries of Reading, direct transportation to Baltimore and the South by a route 40 miles shorter than any other.

The third projected enterprise is the South Mountain Railroad, which starting at the Hudson River, at Poughkeepsie, takes a southeasterly course crossing the Delaware at Portland, the Lehigh at Walnut Port, Northampton County, and the Schuylkill at Hamburg, Berks County, 17 miles above Reading, and terminates at the Susquehanna at Harrisburg, a distance of 190 miles. The line of this road traverses the entire northern portions of the County of Berks. At Straussburg a branch is proposed from the main line, to follow the beautiful Valley of the Tulpehocken, and to terminate at Reading. The object of this road is to establish through and direct communication between the Hudson and Susquehanna Rivers, at Poughkeepsie and Harrisburg, respectively, and at those points to connect with the vast railroad systems of New England on the one hand, and Pennsylvania and the South and West on the other. The line of this road intersects more railroads and canals, than any equal length in the United States, and its completion would add immensely to the manufacturing interests of Reading.

While these new enterprises are being vigorously pushed, the Reading Railroad Company is not behind in extending its facilities by the opening of new local routes, and the formation of new connections. With existing railway advantages and the completion of the new routes proposed, the time is at hand, when the City of Reading will have railroad facilities for general traffic and travel equalled by few, if any, cities in the United States.

THE RAILWAY SYSTEM OF BERKS COUNTY.

The following table gives an exhibit of the railway system of the County of Berks in 1881.

NAME OF ROAD.	Chartered Lines pro- jected or under con- struction.	Main Line of road in operation. single track.	Second and Side tracks. Total equiv- alent. single track.
Allentown. County Line near Port Clinton to Lehigh County Line, beyond Topton.....	17	4.5	4.9
Catasauqua & Fogelsville.....	.....	3.0	4.0
Colebrookdale, beyond Pottstown to Barto.....	.....	11.5	14.0
East Pennsylvania, Reading to County Line, beyond Mertztown.....	.....	22.0	40.0
Lebanon Valley, Reading to County Line, be- yond Womelsdorf.....	.....	17.0	38.0
Moselem.....	.....	1.7	2.4
Oley Valley and Lehigh	25	.....	.....
Philadelphia & Reading, near Douglassville to County Line, beyond Hamburg.....	.....	33.0	83.0
Perkiomen.....	.....	.5	.5
Reading & Chesapeake.....	13	.....	.....
Reading & Columbia, Sinking Springs to County Line, beyond Vinemont.....	.....	5.0	7.0
Schuylkill & Lehigh, South Reading to County Line, beyond Trexlers.....	.....	27.0	32.0
South Mountain.....	45	.....	.....
West Reading.....	.....	1.9	2.8
Wilmington & Northern....	.....	18.7	21.0
	100	145.8	249.6

The report of the Secretary of Internal affairs of Pennsylvania, gives the mileage of railroads in the Commonwealth for 1881, as follows :

Total number of miles operated within the State of Pennsylvania, 9,506.34.

The number of counties in the Commonwealth is 67, which would present an average of 142 miles to each county. As has been shown, the aggregate mileage of railroads in Berks County in 1881 was 249.6 miles, or about 75 per cent. more than the average. It is also stated on the authority of an expert in railroad matters, that at a fair rate of expansion of railroad facilities in the county, judging from enterprises organized, projected, or now under construction, the increase in the near future will not fall short of 40 per cent

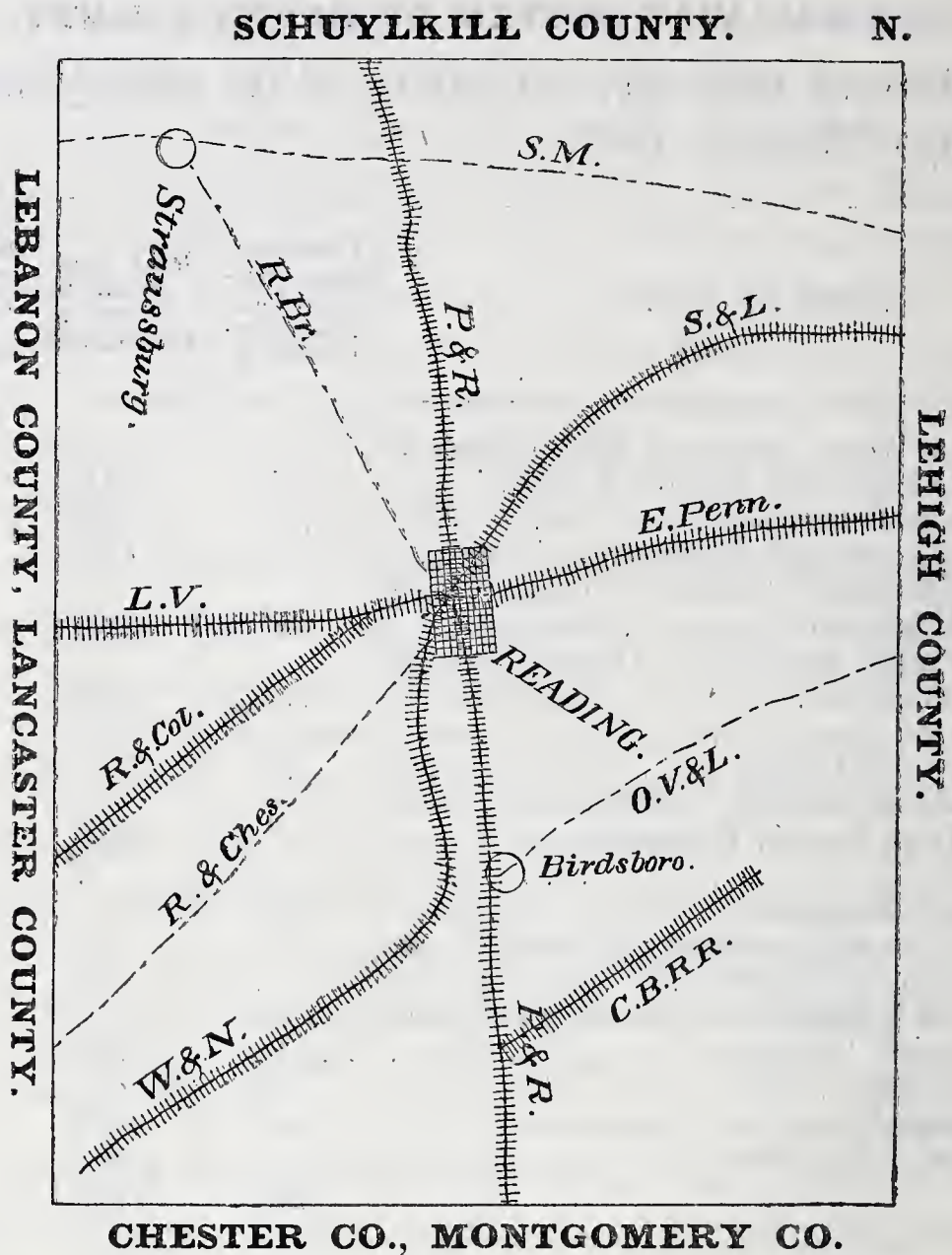


DIAGRAM OF BERKS COUNTY SHOWING ITS RAILROAD SYSTEM.

REFERENCES.—N. indicates North. Each angle of the parallelogram forming the boundaries of the County of Berks bears upon one of the four cardinal points of the compass. Railroads completed, P. & R., Philadelphia and Reading; E. Penn., East Pennsylvania; L. V., Lebanon Valley; S. & L., Schuylkill & Lehigh; C. B. R. R., Colebrookdale; R. & Col., Reading and Columbia; W. & N., Wilmington & Northern.

Railroads projected, S. M., South Mountain; R. Br., Reading Branch, South Mountain; O. V. & L., Oley Valley and Lehigh; R. & Ches., Reading and Chesapeake.

THE ADVANTAGES IN FREIGHTS.

The value of extensive advantages of transportation is naturally affected by the rates of freight. No matter how favorably circumstanced a city might be in respect to convenience and extent of carrying lines, exorbitant or discriminating rates of freight would neutralize all these benefits, and give other localities in competition, such a vantage ground as to paralyze industry and divert trade.

The rates of freight, therefore, is a vital question and especially so to the City of Reading.

A comparison of the merchandise freight classification, for through and competitive freight traffic, between the Philadelphia and Reading Railroad and thirty-three railroads representing connections with all parts of the United States, adopted by the General Freight Agent's Convention, held at Philadelphia, Pa., March 10th, 1881, and approved by the companies there represented, to take effect August 1, 1881, and the West-Bound classification, for Trunk Line traffic, agreed to by all lines from Boston, New York, Philadelphia, Baltimore and other seaboard points, with the rates of other carrying companies, from given points in the same relative position to places of destination as the City of Reading, shows that the rates offered by the Reading Company, from Reading, are upon a basis highly favorable to the interests of manufacturers and merchants. The recognized schedules of Trunk Line classification, which apply to Trunk Line traffic to the West, from Philadelphia, also apply to Reading.

The rates current on December 16, 1881 indicated in classes, were per 100 lbs., as follows :

From Reading.

To	1	2	3	4	A.	B.	C.
Philadelphia.....	25	18	13	10	7	5	5
New York.....	45	35	25	18	17	13	12
Boston (all rail).....	53	43	35	30			
Boston (rail & water)....	40	30	25	20			
Pittsburgh.....	37	30	25	17	Same as from Phila.		
Chicago.....	54	44	38	26	"	"	"
Cincinnati.....	49	40	35	24	"	"	"

The number or letter placed at the head of the column of figures, denotes the class. All articles in classes A. B. and C. and requiring full carloads, are required to be loaded and unloaded by shippers or consignees, the rates of shipment, per 100 lbs, being as above named. Should such service be performed by the company, an equitable charge would be made for the labor.

The water and rail rates during the season of navigation are even more favorable.

The rates given, and in force at the date named might be regarded generally as approximately correct. The fluctuations of foreign rates, influenced by outside combinations and monopolies of the carrying trade, renders a fixed and specific enumeration of rates to points on other lines impracticable.

The Reading Company it appears from a careful inquiry into the subject, has always pursued a policy which has been calculated to stimulate the manufacturing industries of the City of Reading, and the best evidence of this is, that manufacturers as a rule express their entire satisfaction with the efforts of the company to further their interests, either in the transportation of raw materials or shipment of manufactured articles. The manufactured products of Reading reach every market at home and abroad, and at such rates as enable them to enter into favorable competition with establishments at other points.

THE FACILITIES OF WATER TRANSPORTATION.

These immense railroad facilities, are not the only advantages offered to manufacturers and other shippers of heavy merchandise. A system of improvement of the Schuylkill River, by canal and slackwater, early brought Reading into direct water communication with tidewater on the Delaware, at Philadelphia.

The development of the mining operations of the Schuylkill coal fields and the consequent demands for enlarged facilities of transportation, led to elaborate efforts to improve the navigation of the Schuylkill River. In 1815 the Schuylkill Navigation Company was chartered by the Commonwealth, and in 1824 was opened for boats of 30 tons burthen to Reading, and to Port Carbon in 1825, an aggregate distance of 108 miles, of which 63 miles were canal, and 45 miles slackwater navigation and overcoming a rise of 610 feet by means of 117 lift locks. In 1832 this canal was enlarged to accommodate boats of 80 tons to meet the increased tonnage of the coal shipments, and in 1845-46 it was still further enlarged so as to float boats of 200 tons burthen.

The control of the canal passing into the hands of the Philadelphia and Reading Railroad Company by lease for 999 years from January 1, 1870, its operations are conducted as auxiliary

thereto, and under the same management. This canal is to-day one of the finest works of the kind in the United States. Its course lies along the entire water front of the city.

The tonnage for the year 1881 was 600,447.00 tons of coal, 98,791.19 tons of merchandise. Total 699,238.19 tons, (2,240 lbs.)

EARLY EFFORTS TO INCREASE THE FACILITIES OF TRANSPORTATION.

The importance of Reading as an industrial centre and of the Schuylkill as an avenue of trade, was shown by the enterprises of the very earliest inhabitants. In 1732 the husbandmen of Oley, and until better facilities of transportation were effected, conveyed their surplus productions to the banks of the river for shipment by water to Philadelphia. This demand for transportation gave rise to the occupation of boat-building. In the forests on the banks of the Schuylkill about the confluence of the Monocacy, the adze of the carpenter, could be heard ringing forth the birth of a new industry. Within a single season a fleet of canoes was brought into existence to convey the returns of the bountiful harvests of South-eastern Berks to the emporium at the mouth of the Schuylkill. Taking advantage of the fall rains, the movement of the crops began about December and lasted, as the season permitted, through the winter. The cargoes averaged as high as 160 bushels of grain.

By the year 1761 the commerce of the Schuylkill between Reading and Philadelphia, had assumed such dimensions, that the Provincial Assembly was memorialized for Legislation to further the project of improving the navigation of the River.

By act of March 14, 1761, all the powers asked for were granted, and under this authority the energetic inhabitants along the Schuylkill kept the river open to commerce until more extended undertakings were consummated.

WATER COMMUNICATION WITH THE SUSQUEHANNA.

The project of canalization between the Schuylkill and the Susquehanna Rivers was inaugurated by the Provincial Assembly in 1771, when a line of survey and levels were run between the headwaters of the Tulpehocken branch of the Schuylkill and Quitapa-

hilla branch of the Swatara, a branch of the Susquehanna. In 1791 this project was revived by the incorporation of the Schuylkill and Susquehanna Navigation Company, the object of which was to connect these two rivers by means of the water courses named. This enterprise owing to the struggle for National Independence and from other causes, was permitted to rest until 1811, when the Union Canal Company of Pennsylvania secured the franchises of the old company and began work. The project had now enlarged its scope so as to take in the uniting of the Susquehanna and Schuylkill Rivers with the Delaware, and remotely the Susquehanna, with the western waters, through a system of canals reaching the headwaters of the Ohio. The war of 1812 interrupted the consummation of this project and work was not resumed until 1821. In 1827 the main canal was opened from Reading to Middletown on the Susquehanna, a distance of 77 miles, and in 1832 a branch canal 22 miles long, to Pine Grove, was constructed to tap the coal traffic of the Schuylkill region. This water route accommodated boats of 25 tons, and was later enlarged to accommodate boats of 80 tons. Of late years this canal in some portions has been practically abandoned as far as general traffic is concerned, improved methods of transportation having deprived it of its trade. The channel of this once-busy thoroughfare, however, may be seen skirting the western bank of the Schuylkill River, opposite Reading, and pursuing the course of the Tulpehocken Creek, and traversing the western portion of the County of Berks enters the County of Lebanon, a short distance beyond Stouchsburg. The traveler on the Lebanon Valley Railroad speeding away towards Harrisburg often has a sight of this early enterprise.

THE HIGHWAYS RADIATING FROM READING.

But few if any cities in the United States can boast of finer public roads than those diverging from the City of Reading. In every part of the County of Berks are manufacturing and mining establishments, whose only means of communication with the city is by wagon. The transportation of ores and fuel, the product of the charcoal furnaces and bloomeries, flouring and fulling mills,

hat factories and the yield of the fields, in itself constitutes an important industry.

The principal of these highways were constructed at a time long antedating the use of railroads. Among the earliest highways in the Province were those extending along the Schuylkill River. In fact some years before the revolution of 1776, Reading enjoyed improved lines of roads connecting the town with Philadelphia on the Delaware, Sunbury on the northern frontier and Harris' Ferry, (Harrisburg,) on the Susquehanna. The Kings highway from Philadelphia to Harris' Ferry, by way of Reading was one of the through lines of wagon transportation and travel to the headwaters of the Ohio. All these highways are still in use and are maintained in an excellent condition.

THE HYDROLOGY OF THE COUNTY OF BERKS.

As we have seen, the City of Reading presents to manufacturers a system of rail and water transportation not excelled by any other point of the same size in the United States. We have also seen that the policy of railroad management, in freight rates and transportation accommodations, has always been to stimulate production and facilitate communication with points of destination. In the other essential requisites of a manufacturing centre, water and fuel, the City of Reading also enjoys exceptional advantages.

The vast and picturesqued amphitheatre encompassed by the South and Kittatinny Mountains and their tributary spurs, is divided from northwest to southeast, into two almost equal parts by the Schuylkill River. This stream meandering through the alluvial deposits of the Schuylkill basin, forms the main current and drain of the limpid waters, which by the irresistible law of gravitation, fall from the romantic hill lands and constitute the fluvial system of the County of Berks. From the northeast approaches the Ontelaunee or Maiden Creek, rising in the mountains of Lehigh County, and entering Berks, after receiving the more important waters of Stony Run and the Sacony, and the accumulating currents of a thousand perennial springs, empties into the Schuylkill north of Reading. Below the city the Antietam, the Monocacy and the Manatawny pour into the same Schuylkill the contributions of

numberless minor tributary rivulets and the more important courses of Pine, Little Manatawny, Trout, Ironstone and Swamp Creeks, and drain the populous townships of southeastern Berks.

From the northwest approaches the historical Tulpehocken, with its important fountain streams, the North Kill, the Little North Kill, Milk, Spring and Cacoosing Creeks and numerous smaller currents, and pours its limpid waters into the Schuylkill opposite Reading. The picturesque Alleghany and Hay Creeks and other smaller streams, draining the fertile lands of southwestern Berks, also cast their waters into the softly gliding current of the Schuylkill, below the city. It would be impossible to enumerate the number of these streams. They ramify every section and the remotest extremities of the county, and like the arterial system disseminate life, activity and growth. As they descend from their higher altitudes they furnish motive power to hundreds of mills of every character and description, and along their way dispense moisture and fertility to the soil and stimulate vegetation.

The census statistics of water power in the United States, 1880, gives the following information bearing upon that subject as applied to the River Schuylkill, the main fluvial drain of the County of Berks :

SCHUYLKILL RIVER.—Place of observation, Philadelphia ; drainage area, square miles, 1800, which includes almost the entire County of Berks ; mean rain fall, inches, Spring 12, Summer 14, Autumn 10, Winter 9, for the year, 45. The character of drainage basin, hilly and rolling, no lakes, and some reservoirs, extremes of flow, minimum, cubic feet per second, 307.0 to 378.0 ; minimum cubic feet per second per square mile, 0.17 to 0.21. The table of monthly flow in dry years shows flow in inches on water shed, dryest month 0.27, in wettest month 1.59, total for the year, 8.50. Ratio of monthly mean flow, dryest month 0.38, wettest, 2.24.

THE STREAMS OF BERKS AS A POWER USED IN MANUFACTURE.

It has been shown by the hydrography of the County of Berks, that the City of Reading is in immediate access to a bountiful and unfailing supply of water for manufacturing, domestic and



sanitary purposes, and protection against conflagrations. The water sheds of that portion of the county lying to the northward as far as the Kittatinny Mountains are so disposed by nature, that the three great water courses, the Schuylkill in the centre, the Ontelaunee (Maiden Creek), on the east, and Tulpehocken on the west, converge above and near the city, so that their aggregate flow could be brought into use, either by mechanical appliances such as pumping, or by the inexpensive natural force of gravity.

The utilization of the power thus afforded by the almost countless streams, great and small, which we have already shown, circulate through every part of the County of Berks and are available for mechanical purposes, measureably represents the extent to which this potential and essential element of physical force, figures in the industrial development of the City of Reading and contiguous territory.

The census of 1880 represents statistically the application of these natural forces to manufacturing purposes in the County of Berks, and yet it would be impossible even to approximate an estimate of the illimitable reserve force yet unemployed. In every direction around the City of Reading as a common centre of human activity, and as well of the material advantages of the adjacent country, we find abundant water courses with indefinite power awaiting the enterprise of man.

THE UTILIZATION OF THE NATURAL FORCES OF WATER AS A POWER IN MANUFACTURE IN THE CITY OF READING AND COUNTY OF BERKS.

In the entire County of Berks, including the City of Reading, the application of water as a power in manufacture in the census year of 1880, was as follows :

GENERAL INDUSTRIES.		WATER POWER.		STEAM POWER.		
	Establishments using Steam and Water Power.	No. of Wheels.	Horse Power.	No. of Boilers.	No. of Engines.	Horse Power.
County	224	302	3,611	69	51	994
City	63	2	20	105	78	2,013
Total	287	304	3,631	174	129	3,007
Special industries County including City	61	27	635	291	82	10,000
Grand Total...	348	331	4,266	465	211	13,007

The number of water wheels and engines alone represent a hydrodynamic action equivalent to 17,273 horse power, a degree of initial energy which in itself is an additional evidence of the superabundant natural advantages of this region for manufacture.

THE USE OF WATER FOR SPECIAL INDUSTRIES.

It is not necessary to enumerate the entire list of forty-six distinct branches of industry in the City and County, which use water and its more active representative, steam, as a power in manufacture. It may be interesting and important, however, as showing the value and extent of the participation of the fluvial system of Berks in mechanical development, to present a list of selected industries.

The following, therefore, simply gives the more important industries. Those marked with an asterisk (*) apply to **Berks**, exclusively. Those not thus indicated are for the County, inclu-

ding the City, and those marked thus, † are exclusively for the County, the City being represented separately.

INDUSTRIES.	No. of Establishments using water or steam.	WATER POWER.		STEAM POWER.		
		No. Wheels.	Horse Power.	No. of Boilers.	No. of Engines.	Horse Power.
Flouring and Grist Mill, products.†.....	153	238	2,764	32	25	537
Flouring and Grist Mill, products.*.....	2	2	20	2	1	30
Lumber sawed.....	36	38	517	6	6	122
Iron and Steel.....	33	18	486	252	59	9,030
Wool Hats.....	17	4	72	30	17	533
Leather Curried and Tanned†.....	13	3	35	19	10	129
Leather Curried and Tanned*.....	3	.....	.....	7	3	60
Machinery*.....	12	.....	.....	15	15	264
Machinery†.....	1	.....	.....	1	1	25
Woolen Goods.....	10	5	77	6	4	127
Printing & Publishing*...	7	.....	.....	7	8	43
Printing & Publishing†...	1	.....	.....	1	1	3
Agricultural Implements.	4	2	15	2	2	32
Carpentering*.....	4	.....	.....	7	4	100
Hardware*.....	4	.....	.....	9	6	198
Iron Castings†.....	4	4	72	3	2	43
Iron Castings*.....	3	.....	.....	5	4	110
Brick & Tile*.....	3	.....	.....	3	3	65
Confectionery*.....	3	.....	.....	3	3	6
Furniture*.....	3	.....	.....	5	3	83
Furniture.....	1	.....	.....	1	1	8
Paper†.....	2	5	49	3	2	75
Paper*.....	2	.....	.....	7	1	335
Bakery Products*.....	2	.....	.....	2	2	14
Files.....	2	2	18	.....	.....	.....
Lock and Gunsmithing...	2	3	28	.....	.....	.....
Carriage and Wagon Materials.....	2	1	8	1	1	20
Iron Forgings†.....	1	2	75	.....	.....	.....
Iron Forgings*.....	1	.....	.....	2	1	50

The remaining industries enumerated on the official list, viz. : Boots and Shoes ; Boxes, Cigar ; Cordage and Twine ; Dentistry, Mechanical ; Fertilizers ; Iron Bolts, Nuts, Washers and Rivets ; Iron Nails and Spikes, cut and wrought ; Iron Pipe, wrought ; Masonry and Stone Work ; Paints ; Shoddy ; Spectacles and Eye Glasses ; Stone and Earthenware ; Tin, Copper and Sheet Iron-

ware ; Wood Turned and Carved ; Wheelwrighting and Cotton Goods, number one establishment each, and use either water or steam power, or both. There were also two boilers used for heating in the manufacture of leather and wool hats.

The total number of establishments of all industries, for the County, including the City of Reading in the census year 1880, was 877, the proportion of the City being 301. Those included in the above lists numbering 348 establishments used water or steam power, or both. The remaining establishments, 529 in number, used neither. The statistics as stated, apply to the census year 1880. Since that time the number of industries and the use of water and steam as a power in manufacture, have been increased beyond that large aggregate.

THE UTILIZED WATER SUPPLY OF READING.

In 1873, in pursuance of a resolution of the Select and Common Councils of the City of Reading, appointing a Joint Special Committee, in conjunction with the Board of Water Commissioners, Peter Hogan of Albany, New York, made a careful survey and examination of the territory in the immediate vicinity of the city for the purpose of recommending a plan for increasing the water supply for domestic use, the extinguishment of fires and manufacturing purposes.

This report contains many valuable suggestions respecting the abstract question of water supply of cities in addition to the data bearing upon the direct objects in view. Mr. Hogan says, that "few cities possess greater natural advantages for an abundant water supply than the City of Reading."

As the borough grew in population and industries, the inadequate contributions of the rivulets and springs near by, and the inconvenience, and retarding effects of being dependent upon the river, became more and more evident. The community now gave attention to the subject of water supply, and as a result the Reading Water Company was incorporated on March 16, 1819. These primitive efforts consisted in the laying of a small wooden conduit pipe from the spring at the village of Hampden, two miles northeast of the borough, to Penn and Eleventh Streets, or the head of the main

thoroughfare. The water was turned into the pipes July 19, 1821 and furnished a daily supply of about 100,000 gallons. As the demands of the community, and the manufacturing establishments increased, new sources of supply were added. These Estimated on the basis of an average season, were as follows: Hampden in 1821, 1 inch pipe, 100,000 gallons; Edelman in 1838, five inch pipe, 100,000 gallons; Mineral Spring in 1853, 6 inch pipe, 150,000 gallons; Bernhart in 1858, 16, 12 and 10 inch pipes, 1,500,000 gallons; Ohlinger in 1874, 24, 20, 16 and 12 inch pipes, 4,250,000 gallons, making a grand daily total of 4,100,000 gallons. This supply by different improvements and enlargements by January 1st, 1882, was increased to an aggregate maximum capacity of 6,100,000 gallons daily in the best seasons, or an average of 141 gallons per inhabitant.

RECAPITULATION.

The following is an exhibit of the water supply, with present constructions, in the *driest* seasons, giving an average of 89 gallons daily for each person.

	Elevation above Distributing Reservoir. Feet.	Daily Supply Gallons.	Distance from Distributing Reservoir.
Ohlinger or Antietam Lake..	132.4	2,250,000	3 $\frac{3}{4}$ Miles.
Bernhart.....	30.8	1,368,575	3 $\frac{6}{10}$ Miles.
Mineral Spring	62.1	105,000	8,600 Feet.
Hampden Spring.....	113.4	80,000	5,000 Feet.
Edelman Spring.....	319.4	48,000	8,892 Feet.
Total		3,851,575	

The distributing reservoirs at the head of Penn Street are 167 $\frac{1}{2}$ feet above the foot of the same street, at the Schuylkill River. The elevations above given, of the sources of the different supplies, are therefore in addition to the elevation of the distributing reservoirs. The entire supply to meet present wants is amply provided by the springs and streams which fall into the receiving reservoirs from the sides of Mounts Penn and Washington, east of the city.

With a population of 43,280 souls, this aggregate affords the liberal average daily maximum allowance of 141 gallons and

minimum 89 gallons for each inhabitant. It is asserted by hydrostaticians that 30 gallons per day is a fair average, and an average of 60 gallons per day per person has been proven by experience to be an abundance for manufacturing, municipal and domestic purposes.

The entire system of water supply of the City of Reading is operated on the simplest principles of physics, that is the law of gravitation. It is, therefore, inexpensive and constant and not liable to accidents or serious diminution, by anything short of an unexampled and persistent drought.

The waters of the Hampden and Edelman Springs flow directly into the pipes, and thence into the distributing reservoir. The storage reservoirs at the Mineral Springs, have a capacity of about 2,500,000 gallons; Bernhart, 10,000,000 gallons, and Antietam Lake (Ohlinger's), 90,000,000 gallons, thus giving an aggregate storage capacity of 102,500,000 gallons.

This abundant reserve of water for the use of the City, would afford on the basis of the population in 1880, a supply of 30 gallons per day for each person for 79 days, or for 40 days at the extravagant rate of 60 gallons per day for each person. These facts conclusively demonstrate that the inhabitants and the great industries of the City of Reading need have no apprehension of a scarcity of water, as has so frequently occurred at other manufacturing centres.

The distributing reservoirs at the head of Penn Street, were originally constructed by the water company on a smaller scale and enlarged in 1872, at a cost of \$17,000 and have a capacity of 5,132,000 gallons.

The City Engineer, A. Harvey Tyson, to whom the writer is largely indebted for information on the subject of the present water supply of the City of Reading, states that the total length of main and distributing pipes in January, 1882, was 271,748 lineal feet, of which 79,157 feet were supply and 192,591 feet distributing pipes, as follows: 1½ inch, 2,521 feet; 2 inch, 2,255 feet; 3 inch, 9,639 feet; 4 inch, 92,825 feet; 5 inch, 7,299 feet; 6 inch, 85,315 feet; 8 inch, 4,915 feet; 10 inch, 16,225 feet; 12 inch, 15,764 feet; 16 inch, 20,367 feet; 20 inch, 12,901 feet, and 24 inch,

1,722 feet, total 271,748 feet or 51.47 miles. The total cost of the reservoirs, pipes, &c., to July 1, 1882 was \$900,000.

The Board of Water Commissioners of the City of Reading have constantly before them the needs of the future, and have ample available facilities as exigences may suggest.

A COMPARISON OF WATER SUPPLY.

The water supply of the Cities named, in the United States and Europe, in gallons per day per each inhabitant, is reputed as follows: (Knight).

AMERICAN CITIES.

Gallons Daily.

To each person.

Washington	158
READING	141
Pittsburgh	128
New York	100
Jersey City	99
Detroit	83
Albany	80
Toronto, (Canada)	77
Chicago	75
Buffalo	61
Boston	60
Cincinnati	60
Philadelphia	55
Montreal, (Canada)	55
Brooklyn	50
Baltimore	40
Cleveland	40
Columbus	30

EUROPEAN CITIES.

Gallons Daily.

To each person.

Glasgow, Scotland	50
Edinburgh	38
Hamburg, Germany	33
Leghorn, Italy	30
London, England	29
Paris, France	28
Toulouse, France	26
Dublin, Ireland	25
Liverpool, England	23
Turin, Italy	22
Berlin, Germany	20
Lyons, France	20

It will be seen by the above table, that Reading ranks among the leading cities in the world in the abundance of its water supply. It has also been shown that the streams already utilized form but a very small proportion of the grand aggregate afforded by the springs and creeks within available distance by gravity or pumping.

In Ancient Rome the daily consumption per person was 300 gallons. This enormous demand, however, was for the supply of the public baths and fountains of the City. It is an interesting fact, and worthy of mention here, that the first waterworks in the United States, were constructed in our neighboring City of Bethlehem, in 1762, and were in use as late as 1832. The first pipes were made of gum-wood and pitch-pine, in 1789 leaden, and in 1813 iron pipes were substituted.

A COMPARISON OF WATER RATES.

The following is a comparative statement of the water rates of Reading and other cities named, furnished by A. Harvey Tyson, City Engineer.

CITY.	RATE PER HORSE POWER.	METER RATES.
Allentown, Pa.....	\$4.00.	25 cts. per 1,000 galls.
Chester, Pa.....	\$5.33.	
Easton, Pa.....	{ \$3.00 for above 100. \$5.00, for 100 H. P. and less, \$2.00 from 25 to 100.	
Lebanon, Pa.....	{ \$3.00 for 1st 25 H. P. and above 5, \$1.40 additional for each H. P.	
Lancaster, Pa.....	{ \$12.00 for 5 H. P. or under, above 10, \$5.00.	{ 30 cts. per 1,000 galls. per day.
New Haven, Conn...	\$6 00 for 10 H. P. or under.	
Norristown, Pa.....	\$3.00.	
Pittsburgh, Pa.....	\$4.12.	
Providence, R. I....	\$5.00.	10 cts. per 1,000 galls.
Pottsville, Pa.....	{ \$3.00 above, \$4.00 below } 50 H. P.	
Pottstown, Pa.....	\$4.50.	
Phoenixville, Pa....	\$3.00.	
Philadelphia, Pa....	\$3.00.	\$1.25 per 1,000 cubic ft. 8 cts. per 100 cubic ft.
READING, PA.....	\$2.75.	
Scranton, Pa.....	\$7.50.	
Williamsport, Pa....	\$3.00.	
Wilmington, Del....	\$4.00.	7½ cts. per 1,000 galls.
Harrisburg, Pa.....	\$3.00.	

The policy of encouraging manufacturers by furnishing water at nominal rates, or free, is one that has much force. It is claimed

that increased revenues would accrue from the increased number of water takers, and thus compensate any apparent immediate loss.

The rates of the City of Reading for the years 1881-82, show the following charges upon industrial establishments :

Hatter's Planks.—Fours, per set, \$8.00, sixes, per set, \$10.00, eights, per set, \$12.00. *Brick Yards.*—Each table \$5.00. *Steam Engines.*—High pressure, per horse power, \$2.75. Manufacturing establishments and all others not enumerated are rated according to the amount of water used.

The metre rates are 100 cubic feet for manufacturing purposes, 8 cts., 100 cubic feet for all other purposes, 16 cts. Special rates are given to manufacturers.

The rates for dwellings, stores, schools and public buildings, hotels, restaurants, fountains, stables, bakeries, barber shops, photograph galleries, &c. are reported as, low or lower, than for similar purposes elsewhere.

FACILITIES FOR INCREASING THE WATER SUPPLY OF READING.

Mr. Hogan in his report, after a careful investigation of the possibilities of the future, submitted a statement of several sources of supply which could be economically utilized, either by gravity or pumping.

He says that the waters of MAIDEN CREEK were found favorable in quality and abundant in quantity, but not available by gravitation within a distance of twenty miles. A suitable point for pumping was found twelve miles distant from the city. LAUREL RUN, at Clymer's charcoal furnace, six miles from the city, with Willow Creek tributaries, eleven miles distant, would afford an aggregate supply of one million gallons per day, which could be added by gravitation to the supply at Bernhart's. The ALLEGHANY CREEK, at several points seven-and-one-half miles distant, contains an abundant supply of water, but could not be utilized by gravitation. The ANGELICA CREEK, four-and-one-half miles from the city, affords in the dryest seasons a daily supply of not less than two-and-one-half million gallons of very superior water daily. (See Angelica Water Company). The WYOMISSING, at a point

five-and-one-half miles distant, could be relied upon to supply by gravitation, not less than two million gallons daily. The SPRING CREEK, at Robesonia, thirteen miles distant, would afford a supply of three million gallons daily, at an elevation of over 100 feet above the distributing basin in the city. The TULPEHOCKEN RIVER, next to the Schuylkill the largest stream of water in the vicinity of Reading, could not be utilized by gravitation, but Mr. Hogan anticipating a time which might arrive at no distant day, when a much larger amount of water would be required for the city than could be supplied by the other sources proposed, made an examination of this river up to a point where the Cacoosing Creek empties into it about four-and-one-half miles from the city. He concluded that the latter stream could be favorably utilized in connection with the Tulpehocken River, whenever pumping should be required.

THE ACCESS OF READING TO THE ANTHRACITE COAL FIELDS.

Immediately beyond the rugged Kittatinny Range, which rests upon the distant horizon like a blue wall, and separates the counties of Berks and Schuylkill, lie the great anthracite coal basins of Pennsylvania. The City of Reading is in direct communication with these vast areas of mineral fuel by the system of the Philadelphia and Reading Railroad Company, and at a distance of about thirty-five miles. The extensive facilities for the carrying of this fuel, and in which Reading is a direct participant, has already been mentioned under the head of transportation. As an evidence of the vastness and extent of these operations, it may be interesting to state the following facts.

The vested capital employed in the mining and transportation of this valuable commodity will not fall far short of \$300,000,000. For its transportation exclusively, or chiefly, there have been constructed no less than twenty-two railroads, with 520 miles of sidings and branches; 539 miles of double track and 1,231 miles of main track, aggregating 2,290 miles, at a cost of \$130,000,000, and nine canals, with a total length of 673 miles, at a cost of \$50,000,000. In addition to this there was a total vested capital, real and personal,

including mineral value of 164,852 acres, machinery, animals, tracks, value of plant and working capital, according to the returns of the census year, 1880, amounting to \$150,161,196 and the value of at least 140,000 acres of unworked lands.

The manufacturers of Reading have direct access to this practically inexhaustible supply of fuel at rates and with a degree of convenience which gives them a decided advantage over localities more remote. The point of convergence of laden trains, Schuylkill Haven, from the mine roads and point of shipment to destination, is but 31 miles distant from Reading, and from industrial establishments in the county, in proportionate proximity or remoteness. It can therefore be said that no manufacturing city in the United States possesses greater advantages of convenient and cheap fuel for manufacturing purposes than Reading. The area of the anthracite fields is 472 square miles, and the thickness of the veins, average about 20 feet, representing an estimated mass of 6,000,000-000 tons of coal, or 186 years supply at a proportionate ratio of increased consumption and allowance for the enormous waste in mining.

THE MINING INDUSTRIES OF BERKS COUNTY.

With its vast system of transportation, bountiful supply of water and immediate access by railway and canal to the immense fields of anthracite coal, it must be conceded that the City of Reading has advantages as a place of manufacture presented by few, if any other locality in the United States. But these are not the limits of its advantages. The section of country within its immediate vicinity, and spreading out over the entire County of Berks, possesses a revealed mineral wealth of marvellous extent and variety, and a soil of inexhaustible fertility.

At the very doors of the great establishments of the city, are found the raw materials from which in unbroken sequence, are wrought out the most highly developed manufactured articles. From the underlying earth the labor of man lifts the crude and unrefined ore, the ever-burning fires of mighty furnaces separate the metal from the dross, the varied mechanical appliances and the ingenuity of skilled artisans convert the metal into fabrications of

all sizes and degrees of finish, from the immense shaft which propels the steamer upon the tempest tossed billows, down to the delicate frame of a pair of spectacles.

THE METALLURGICAL RESOURCES CONTIGUOUS TO READING.

In summing up the richness of the region contiguous to Reading, in iron ores, Hiram W. Hollenbush, whose practical knowledge of the minerals and ores of Berks County makes him an undoubted authority on this subject, says:—Iron Ore is found, though not always in workable quantities, in almost every township in the County of Berks. In Oley, we find an abundance of Limonite, Magnetite and Hematite. In Pike, Magnetite, Limonite and Hematite; Ruscombmanor, Magnetite, Hematite and Limonite; and in Rockland, Limonite, Hematite and Magnetite. In Alsace, immediately adjoining the City of Reading on the east, and on Mount Penn within the limits of the City, is a vein formerly worked, of igneous iron ore containing 37 per cent. of metallic iron. In Exeter and Earle, Magnetite; Richmond, Limonite; Cumru, Magnetite; Caernarvon, Magnetite; Center, Limonite; Colebrookdale, Magnetite; District, Magnetite; Heidelberg, Limonite; Hereford, Magnetite; Longswamp, Magnetite and Limonite; Maxatawny, Magnetite and Limonite and in Spring and Washington, Limonite.

In fact the whole range of the southeastern tier of Townships lying in the metalliferous formations of the South Mountains, yields an inexhaustible supply of first quality ores. This belt begins in Hereford Township and takes in District, Washington, Pike, Colebrookdale, Earl, Amity, Douglass, Union and Caernarvon Townships.

In speaking of the different mines, Mr. Hollenbush says: that the Moselem mines in Richmond Township, yield a Limonite of very good quality, also good specimens of Gothite, (Bakt). The fibrous and the variety of Lepidocrokite are found with the Limonite. This ore is used by the Keystone Furnace Company and many others. The Udree mines in Ruscombmanor, worked by

the Clymer Iron Company yield a Limonite of very fine grain and conchoidal fracture of dark brown color. The amount of metallic iron is about 40.30 per cent. The Oley Wash mines, on Kempt's Farms, Oley Township, yield a Limonite, partly lump, and the rest Wash Ore, color from light to dark brown. It shows some manganese and some bog manganese. The bottom of this Limonite bed is a carbonate ore, fine grained, fracture conchoidal, color grey to greyish brown. The ore when used alone makes a cold, short iron. The mineral wealth of Oley Valley alone is almost incalculable. The Magnetics, the Red Oxide and Brown Ores from this section produce an iron rivalling in quality the famed irons of Sweden and Norway. The old mines of the Oley Furnace, near Friedensburg and on Pine Creek near Lobachsville are also rich in first quality ores. The Heffler's Mines in Maxatawny Township, yield a Limonite of light to dark brown color with metallic iron 36.15 per cent. These ores are used by the Temple Iron Company. The William Miller Mines, about three miles north of Topton Station in Maxatawny Township, yields a Limonite, lump and wash ore, producing about 45 per cent. of metallic iron. The Fleetwood Iron Company's Mine, near Mertztown, Longswamp Township, yields a Limonite, lump and wash ore, of dark brown color with 49.50 per cent. metallic iron. The Klein's Mine, Longswamp, yields a limonite, wash and lump ore with 45.50 per cent. metallic iron. The Charles Miller Mine, Longswamp, yields metallic iron 53.10 per cent. The Samuel Lewis Mine, near Mertztown, Longswamp, yields 44.00 per cent. metallic iron. The Trexler's Mine, near Mertztown, Longswamp, yield 52.20 per cent. metallic iron. The Merkel's Mines, Farmington, yields 47.20 per cent. metallic iron. The Johnathan Ziegler Mines, Farmington, Longswamp, yield 44.80 per cent. metallic iron. The David Ziegler's Mine, north of Mertztown, yields 36.55 per cent. metallic iron. The Clymer's Iron Company Mine, in Roscombmanor Township, magnetite for the most part powder, soft, dull black to brown black color, yields 42.70 per cent. metallic iron. The Beitler's Mine, Rockland Township, magnetite, coarse grained hard and tough, with Pyrites, black lustre and somewhat vitreous, yields 63.75

per cent. metallic iron. The Fritz Island Mine, two miles below Reading, produces a good magnetite, yielding from 40 to 50 per cent. metallic iron, and is worked by the Reading Iron Company. The Jones' Mines, in Caernarvon Township, are magnetite of excellent quality and richness. Several varieties of copper ore are found at the same locality.

The Boyertown Mines, located in or near Boyertown, in the eastern part of the County, yield a magnetite of two varieties, a black calcarious and a blue, free of lime. The gangue is a chloritic formation and calcarious. Some very fine crystalized specimens of calcite and pyrites are found in the cavities. These ores yield from 40 to 50 per cent. metallic iron. The Gable Mine, near Boyertown, alone yields a daily supply of two hundred tons of the best ore adapted to the manufacture of the finest quality of steel. The latest improvements in mining machinery are in use, and in every respect this mine is fully equipped. The ores yield 40 and 50 per cent. of metallic iron, and are used largely by the Ringgold Furnace, the Pottstown Steel Ore Company, the Reading, Leesport, Sheridan, Kutztown, Topton, Monocacy, and Pottstown Iron Companies, and other establishments. The Wheatfield Mines, near Fritztown, Cumru Township, yield a magnetite of good quality and used by the Reading Iron Company.

The ores of the Wheatfield, Fritz Island, Boyertown and Jones' mines are specially noted as of the best quality for Bessemer Steel.

In the vicinity of Siesholtzville, in Hereford Township, are the valuable iron ore tracts owned by the Philadelphia and Reading Coal and Iron Company. This powerful corporation has already in progress a system of improvements which will soon add this new source of supply to the iron ore product of the industrial dependences of the City of Reading, and will contribute largely to bringing the County of Berks to even a higher rank as one of the great centres of iron ore supply of the United States.

THE GENERAL CHARACTERISTICS OF THE SOIL.

In addition to the vast supplies of iron ore, the County of Berks and especially in the vicinity of Reading, furnishes a fine variety of

lime-stone, so essential to the working of these ores, and other stone of economic value.

The predominating characteristics of soil are limestone, gravel, gneiss and white sandstone, with exceptional varieties in localities. The valleys in some parts exhibit a deep deposit of diluvium, which completely covers the underlying formations. In the north-eastern part of the county, a belt of limestone, about ten miles wide, approaches from Lehigh County and passing through the Townships of Maxatawny and Longswamp, with an occasional admixture of gravel and out-cropping of sandstone, stretches across the County in a southwesterly direction crossing in its course, the Townships of Richmond, Rockland, Pike, Maiden Creek, Ruscombmanor, Oley, Ontelaunee, Muhlenberg and Alsace, passing Reading, and continuing west on the Schuylkill, across the Townships of Bern, the Heidelbergs, Spring and parts of Cumru, and enters Lancaster and Lebanon. The limestone formation is also met with in some of the southern townships. In this belt, in the hills near Mertz-town, white sandstone crops out and south of it is a considerable tract of country where no rocks appear at the surface, except isolated sandstone, owing to the fertile deposits of diluvium. On Mount Penn at Reading, commencing east of the City and running N. N. E. five miles, the summit and west side, consists of primal white sandstone, dipping to the W. N. W., and descending the eastern slope, gneiss rock is encountered, until the "Mineral" Spring, is reached, which is the terminus of a belt of gneiss and syenite. In Oley Township the surface of the hills is covered with fragments of gneiss, and the valleys with diluvium, with an out-cropping of sandstone at Oley Furnace. In the northern and western parts of the same Township primal slate, sandstone and auroral limestone, are met with. Gneiss rock also appears in places west of Reading and south of Womelsdorf, towards the line of the County of Lebanon. Between the limestone belt and the Kittatinny Mountains, which embraces the line of northern Townships, the soil is generally slate and gravel, often inclined to sterility. On the south of the central belt below Reading, in Exeter Township, a

formation of conglomerate is met with, and beyond in the same Township, crosses a belt of red shale.

THE RELATIVE POSITION OF THE MINING INTERESTS OF READING.

In casting up the aggregate product of this prominent and important feature in the advantages advanced by Reading, as a place of manufacture, the census of the United States for 1880, gives the County of Berks the third place in the iron-ore producing counties of Pennsylvania. The counties which exceeded it were Lehigh 321,322 tons; and Lebanon 285,629 tons, with Berks turning out 252,940 tons. In the list of iron-ore producing counties of the first-class in the United States, Berks ranked seventh. It might be added that the County of Berks in the same year, ranked in this valuable product, ahead of every State in the Union, save Pennsylvania, New York, Ohio and New Jersey.

Since the census of 1880, the development of the production of iron-ore has been enormous and will show a large increase.

It will be observed, however, that the County of Berks and its metropolis Reading, lie in the very heart of the great iron-ore producing section of Eastern Pennsylvania. On the northeastern border is the County of Lehigh, the first in rank as a producer, on the southwest are the Counties of Lebanon, the next in rank, and Lancaster, the ninth on the list, while on the southeast are the Counties of Montgomery and Chester, both of which contribute a liberal quantity to the aggregate supply.

THE GENERAL CHARACTER OF THE MINERAL WEALTH OF BERKS.

It is evident, from a scientific point of view, that the mineral wealth of the region within a limited radius of Reading is practically but little known. No less than fifty-eight distinct minerals have been found in marketable quantities, or in decided traces. Besides the inhaustible beds of the three most valuable ores of iron, Magnetite, Hematite and Limonite, a workable vein of the finest quality of Kaolin, or Porcelain Clay exists, which is specially free

from iron, and may at an early day encourage this important branch of industry.

Besides these there have been found decided traces of Gold, Copper, Antimony, Plumbago, Lead, Zinc, Serpentine, Mica, Black Mica, Potash, Pyrolusite and other pigments used in coloring pottery, Gypsum of the fibrous variety, also the White (Alabaster) so much prized for vases and other objects of household ornamentation. There are also valuable veins of marble and specimens of some of the finest gems and ornamental stones, which have been preserved as cabinet specimens. These include several of the finer varieties of Garnets, beautiful and rare Zircon, precious or noble Serpentine, a gem of a beautiful shade of green, of translucent resinous lustre; the rich and valuable gem of the Ural Mountains, Malachite; Calcite, a variety of Turquoise and Zeolite or Bubble Stone. There exist also many of the finer varieties of Rock Crystal, Flour Spar and Quartz. In fact, it is seldom within the circumscribed limits of 900 square miles, that such a long list of representative products of the mineral kingdom has been known to exist, and who can tell what the revelations and discoveries of the unknown and impenetrable future may bring to the knowledge of approaching generations.

ANNOTATED LIST OF MINERALS OF BERKS COUNTY.

In support of this general review of the marvellous mineral wealth of the Country in the vicinity of the City of Reading, we desire to insert for the information of those specially interested, a paper by Dr. W. J. Hoffman, M. D. of Reading, late Mineralogist of the U. S. Geological Survey, and at present a member of the Ethnological branch of that service, which has been specially prepared for this purpose, from his own notes and the valuable collections of Hiram Hollenbush, of Reading, giving the following annotated list of minerals of Berks County, classified according to DANA.

Gold.—One locality is thus far reported in Berks County, where native GOLD is said to exist, viz.: at the western base of Mount Penn near the suburb of Hampden. The late John P. Miller found a piece of quartz bearing traces of this metal, with one or two very prominent particles. Dr. Chas. M. Wetherill found traces of Gold in ferruginous quartz from the same place, an extended discussion of which will be found in the *Trans. Am. Phila. Soc.*, Philada., Penna., Vol. x., 350, *et. seq.*

Copper.—This metal has been found native in both crystalized and arborescent forms at Jones' Mine. In a collection of minerals received from that locality in 1859, were several fine specimens covered in some places by cuprite, giving it a dull color.

Graphite.—(Plumbago or Black lead.)—Used in making lead pencils, has been found sparingly at Jones' Mine by Mr. Hollenbush. Dr. Genth reports it as occurring two miles northeast of that place, a partial analysis of a sample, evidently from that locality, yielding 10.85 per cent. of carbon.

As a furnace product, Graphite has been found in fine examples at Eckert's Furnace, south of the City of Reading. Specimens from this locality occur in the collection of Mr. Hollenbush.

Stibnite.—This Ore of Antimony, tersulphide, was found to occur in very minute crystals at Fritz's Island, near Reading, associated with Zeolites. (Genth).

Molybdenite.—Sulphuret of Molybdenum, a rare metal and occurs in Alsace Township at several localities. On Valentine Hartman's Farm, both crystalized and foliated masses have been found, examples of which, I believe are now in the collection of Mr. Hollenbush. Prof. Genth mentions it as occurring similarly at Zion's Church.

Galenite.—Occurs sparingly at Fritz's Island, in granular masses. (This is the principal ore from which lead is extracted.)—Author.

Bornite.—(An Ore of Copper.)—Has been found at Fritz's Island, though in very small quantities.

Sphalerite.—(Sulphuret of Zinc, Zinc Blend.)—A small specimen of a yellowish brown color was found in a collection of minerals said to occur at Jones' Mine, but upon examination and comparison, I believe the original locality to have been Shannonville, Montgomery County, where similar forms were found, the matrix in both being also identical.

Chalcocite.—(Sulphuret of Copper.)—Occurs sparingly in granular and compact masses at Jones' Mines.

Pyrrhotite.—A slightly micoliferous variety of this mineral occurs in Alsace Township.

Pyrite.—(Sulphuret of Iron.)—Iron pyrites occur in various parts of the County, the Boyertown Mines furnishing probably the finest crystallizations. The nodular variety occurs in Centre Township. Distorted crystals are reported from Fritz's Island by Mr. Hollenbush.

Chalcopyrite.—(Copper Pyrites.)—Occur at Jones' Mine and Fritz's Island, associated in the latter locality with magnetite.

Fluorite.—(Fluor Spur.)—Pale Topaz-colored modified cubes measuring from one-third to seven-eighths of an inch in diameter, occur associated with calcite near Fritztown. Smaller crystals of an amethystine hue are found in Brook's Quarry, north of Reading. Granular masses and crystals of violet and purple tints occur sparingly in DeTurk's Limestone Quarry, four miles east of Reading.

Cuprite.—Has been found in thin coatings on native copper at Jones' Mine. The only specimens known to me were discovered prior to 1860. Mr. Hollenbush, who has repeatedly visited the mines since that time, states that it is exceedingly rare.

Water.—Although this county is known to possess numerous springs containing varying quantities of iron, lime, etc., the time at the disposal of the present writer would not be sufficient to enter into a review of their properties and composition.

Hematite.—(Specular Iron, native Oxide of Iron.)—The micaceous and specular varieties are found at Fritz's Island, good crystals of the latter are not common. Red Hematite occurs in many of the mines, in varying quantities.

Magnetite.—(Magnetic Iron.)—This forms one of the most valuable iron ores in the county and is usually massive. Crystallized, however, it occurs in fine octahedron and dodecahedrons at Boyertown, Fritz's Island, and occasionally at Jones' Mine. Distorted crystals are reported by Mr. Hollenbush, as occurring also at Fritz's Island many of the water courses in the hilly portion of the county contain large quantities of magnetic iron sand. This is particularly noticeable on the eastern slope of the range of hills running from Mount Penn toward the northeast.

Pyrolusite.—Prof. Genth mentions this mineral as occurring "in small rhombic crystals in geodes, frequently associated with turgite in limonite beds," but does not refer to any specific localities, (Employed in making glass, glass painting, enamelling, glazing and coloring pottery.)—Author.

Turgite.—Occurs in thin layers on limonite at the Udree Mines, some of the specimens found by Mr. Hollenbush present lustrous tints, becoming at times almost iridescent.

Gothite.—Occurs at the Udree Mine, as does also the variety lepidocracite. Mr. Hollenbush has also found the so-called velvet ore at Sinking Springs. (A variety of Hematite.)

Limonite.—(Brown Iron Ore.)—Fine botryoidal and fibrous varieties of this iron ore occur in the mines along the line of the East Pennsylvania Railroad, occasionally, also near Boyertown and at Sinking Springs. The earthy or ochreous variety is found in many of the mines, though often in but small quantities. Bog ore occurs on the Slegel Farm, across the Schuylkill, west of Reading, where fine specimens were at one time obtained.

Psilomelane.—(Uncleavable Manganese Ore.)—Fine specimens were secured in Rockland Township, near the Forges by Mr. Hollenbush.

Wad.—(Earthy Oxide of Manganese.)—The present writer found some fine mammillary concretions near the Morgantown Road, about $\frac{1}{4}$ mile below the Lancaster Bridge. Mr. Hollenbush mentions the discovery of massive specimens in an old deserted tunnel, in Oley Township, also globular near Birdsboro. Prof. Genth states that Wad "has been observed as a frequent associate of Limonite ores. Most of the Wad or Bog Manganese of the Limonite region of Northampton, Lehigh, Berks, Montgomery and other Counties contains some cobalt." (Used as a coarse pigment in oil painting, for coloring and glazing pottery and in the manufacture of glass.)—Author.

Quartz.—(Rock Crystal.)—Pure, *transparent* crystals occur from $\frac{1}{2}$ to 2 inches in length at Lee's in Oley Township; smaller crystals in the Crystal Cave; the *smoky* variety, crystallized has been found in good condition on the Boyertown Road, four miles east of Reading. *Blue* (Amethystine) Quartz, massive, though of good color occurs in Oley Township, while the small brownish yellow crystals of the *Ferruginous* (Cairngorm) varieties have been found in small quantities in Rockland Township.

Drasic Quartz, occasionally tinted, milky, pale blue, pink and ferruginous, occurs near Pricetown. *Chalcedony* has been found in fine examples near Pricetown, though not common, occurring rarely also in botryoidal form at Fritz's Island, the variety *Plasma* occurs sparingly at Ohlinger's. Prof. Genth mentions *Agate* as being found near Reading, as also *Agate-Jasper*, "graduating into several other varieties such as Jasper, Hornstone, Flint, &c." *Hornstone* is found several miles east of Reading, of a light brown translucent variety; also in nodules with limestone. *Jasper* of light brown and variegated colors, marked with seams of translucent and opalescent chalcedony occur abundantly in Ruscombmanor Township.

Pyroxene.—(Hornblende Family.) Prof. Genth mentions a beautiful variety occurring in cleavage masses, often over one inch across and several inches in length, from Godshall's Mine, Alsace Township. Mr. Hollenbush states upon reliable authority, that the variety *Hudsonite* occurs on Mount Penn near Reading. The variety *Augite* occurs sparingly in Oley.

Amphibole.—(Hornblende Rock.)—The two most interesting varieties of this specie occurring in fine examples are Asbestos and Mountain Leather; the former being found at Ohlinger's, fibrous and of a bluish color, and the latter at Boyertown.

Fayalite.—As a furnace product, this Iron-Chrysolite was found by the writer, sparingly at the Sheet Mill in Reading about eight years ago. Since that time several beautiful specimens have been obtained at the same locality.

Garnet.—Fine crystals of the variety *Grossularite*—Lime Alumina-Garnet—occur on Fritz's Island. Mr. Hollenbush has some excellent specimens from this locality. The same variety occurs also in twin crystals at Bishop's Mill, Exeter Township. At Spiese's Church, Alsace Township, are found small Garnets of a reddish brown and wine color, probably belonging to the variety *Andradite*. Prof. Genth states that the massive Garnet found on Valentine Hartman's Farm in Alsace Township, probably belongs to the variety known as Manganese-Alumina-Garnet—*Spessartite*.

Zircon.—(One of the Gems.)—Fine crystals have been found near Pricetown by Mr. Hollenbush, measuring about two inches in length. This mineral is associated with magnetite according to Prof. Genth. According to the analysis by Dr. Charles Wetherill, given in the *Trans. Am. Phila. Soc.* Vol. x. p. 340, these crystals yielded 63.50 per cent. of Zirconia. (The colorless varieties named Jargon are often sold for diamonds, the brilliantly colored are termed Hyacinths.)—Author.

Epidote.—Mr. Hollenbush obtained fine crystals in Alsace township. Small masses of a crystalline character occur also on the Boyertown Road about four miles east of Reading.

Allanite.—(A Silico-Aluminate of Cerium.)—Prof. Genth notes this as occurring near Price-town, associated with Magnetite and Zircon.

Biotite.—(Black Mica.)—Mr. Hollenbush reports this as occurring several miles N. N. E. of Reading. Exact locality not stated.

Muscovite.—(Muscovy-Glass Mica.)—Pale greenish white laminae occur in Oley Township, and at Clymer's Mine, Alsace Township, in greenish scales with chlorite.

Wernerite.—(A rare Mineral.)—Crystals $\frac{1}{2}$ inch in length of a resinous lustre have been found at Fritz's Island. Crystals with double terminations are rare.

Orthoclase.—(Potash Feldspar.)—Found in good crystals on the eastern slope of Mount Penn, and reported also from Oley Township.

Titanite.—(Prismatic Titanium.)—Prof. Genth remarks the occurrence of this mineral two miles northeast from Jones' Mine. (This is one of the elementary substances.)—Author.

Chrysocolla.—(Silicate of the Protoxide of Copper.)—Several fine but small fragments were obtained some years since, from Jones' Mine. This appears to be the only locality in Berks County where any of the more desirable compounds of copper occur.

Apophyllite.—(Fish Eye Stone.)—This was found by Mr. Hollenbush at Fritz's Island associated with Calcite and several Zeolites. At least three varieties of Tetragonal crystals occur.

Allophane.—(Clay Family.)—Prof. Genth mentions Jones' Mine as having furnished very fine white and sky-blue Mammillary and Stalactitic masses. Mr. Hollenbush who discovered this locality a few years ago has some specimens in his collection.

Thomsonite.—(Zeolite Family.)—Some specimens in the collection of Mr. Hollenbush, found at Fritz's Island, consist of concretions of fine radiating structure.

Mesolite.—This species has also been found at Fritz's Island by Mr. Hollenbush and myself. (Fibrous Zeolite.)

Chabazite.—(Zeolite Family.)—Good white, vitreous crystals, $\frac{1}{2}$ inch in length, have been obtained at Fritz's Island, specimens of which are rather uncommon.

Stilbite.—(Zeolite Family.)—Occurs in radiating crystallized masses at Ohlinger's Dam. Prof. Genth says it has also been found at Rautenbush, [probably meaning Raudenbush's] Mine near Reading.

Undescribed Zeolite.—Some years since, Mr. Hollenbush found a crystallized mineral of the Zeolite group, which has not yet occurred in sufficient abundance to yield accurate analysis for identification or classification. Specimens which I have observed consist chiefly of small hollow shells, which have resulted from the weathering out of the crystals of calcite upon which this Zeolite had been deposited. Crystalline groups, examined by Prof. Genth, much resemble, according to that gentleman, rectangular prisms with rhombic octahedra twinned like Phillipsite and also surround a nucleus of Calcite.

Talc.—(A Soft Magnesium.)—As Steatite, this has been found very sparingly at Fritz's Island. (Common Talc is used for crayons, polishing stones, crucibles, filling materials, absorbents of grease and porcelain mixtures.)—Author.

Serpentine.—Magnificent specimens, though not of very large size have been obtained at Fritz's Island. Various colors occur running through shades of yellowish-brown to dark olive green. Mr. Hollenbush informs me that he has found small fragments that may safely be termed *precious* or *noble* Serpentine.

Kaolinite.—(Kaolin, the finest Porcelain Clay.)—This is found of fine quality and in considerable (marketable) quantities on Kemp's Farm, in Oley Township. (It has also been largely tested with success.)—Author. Prof. Genth mentions a variety of clay occurring at Jones' Mine, which contains from 2.5 to 10 per cent. of copper.

Damourite.—Mr. Hollenbush possesses some fine specimens of the variety known as *Sericite*, containing fine seams of lilac tinted Quartz. This has several times been erroneously labeled *Talc*.

Perchlorite.—(Potash-Mica.)—Prof. Genth mentions this as occurring associated with magnetic iron ores at Topton, Fritz's Island and other mines in the neighborhood of Reading. Mr. Hollenbush has obtained curved crystals nearly an inch in length at Fritz's Island.

Apatite.—(Phosphate of Lime.)—Has been found sparingly at Jones' Mine, of a blueish color.

Barite.—(Sulphate of Baryta.)—Prof. Genth mentions the occurrence of a *fetid* Barite, in brownish, radiating and columnar ferruginous masses at Heidelberg. (Often used to adulterate lead paints.)—Author.

Gypsum.—(Sulphuret of Lime—Plaster Paris.)—Rarely, in acicular crystals, at Jones' Mine. Crystals $1\frac{1}{2}$ inches long have been found at Bushong's Mine north of Reading.

Calcite.—(Crystallized Limestone.)—Various forms have been met with in greater or less quantity at the Crystal Cave. Manganese dendrites occur on Calcite on Fritz's Island. *Dogtooth Spar* occurs at Fritz's Island. Fine large Rhombohedra, pink crystals occur about one mile north of Reading. Specimens of a pale pink or rose color, consisting of small flat rhombohedra, yielded on analysis 13.28 per cent. of Carbonate of Manganese; the locality was DeTurk's Farm about 4 miles east of Reading.

Magnesite.—Prof. Genth reports this from Earl Township, where it was found near Spangsville in an old iron mine. (Carbonet of Magnesia.)

Siderite.—Occurs massive in Oley Township according to Mr. Hollenbush. (Variety of Iron Ore.)

Aragonite.—(Calc. Spar Family.)—Radiating and isolated acicular crystals have been obtained at Jones' Mine by Mr. Hollenbush. Occurs sparingly, also at Fritz's Island, the variety known as *Flos Ferre*, (Flower of Iron) has also been found at Jones' Mine.

Malachite.—(Green Carbonate of Copper.)—Very fine pieces were obtained from Jones' Mine some years ago. The general form was in Botryoidal masses and fibrous. It admitted of a very high polish. Occurs fibrous on Fritz's Island according to Mr. Hollenbush. (Highly prized for ornamental purposes.)—Author.

Azurite.—Fine crystalizations were obtained some years ago at Jones' Mine. Occurs crystalized and massive, also on Fritz's Island.

Venerite.—In addition to the above, I may mention the occurrence of a new compound of Copper from Jones' Mines, an analysis of which will be found in the *Zeitschrift Fur Krysd. and Minerologie*, 1877, p. 495, an extract of which also appeared in the popular *Science Review*, Lond. (Jan. 1878), No. 5, New Series, p. 108.

THE MANUFACTURING INDUSTRIES OF READING AND CONTIGUOUS TERRITORIES.

It is an historical fact, which can be reverted to with laudable pride by every citizen, that the great iron industries of Pennsylvania were born upon the soil of Berks, and were brought to permanent development by her enterprising people. It is true that the London Company in 1619, but twelve years after the founding of the first permanent English settlement on the continent of North America, sent skilled workmen to Jamestown in Virginia "to set up three iron works." They made iron in 1620 and within one year these works were destroyed, and the workmen extirpated by the savages. The early efforts to make iron in America were assayed in Massachusetts in 1643; in Connecticut in 1656; in Rhode Island in 1675; in New Jersey in 1664 and in Pennsylvania in 1692, but proved to be failures. The Commonwealth of Pennsylvania, whose metallurgical development has far exceeded that of any other State, was the last to enter the field. This might be at-

tributed to the fact that that colony was the last to have an established government of its own.

BERKS THE BIRTHPLACE OF THE IRON INDUSTRIES OF PENNSYLVANIA.

The Proprietary in writing to his friends during his first visit to his province, 1683, referred to "mineral of copper and iron in divers places," and offered inducements to Welsh iron masters to emigrate to his province to open the mines and begin the manufacture of iron. He had carried his plans so far as to dispose of a tract of iron land in Caernarvon Township, now in the County of Berks, and remarkable to relate, still operated, to a party of Welsh, as early as 1686. It was not, however, until just before his death, that the first permanent iron works were established in Pennsylvania. Instead, however, of being a Welshman, the proprietor of this incipient enterprise was a German, some say an English smith, named Thomas Rutter who plied his vocation near Germantown. This courageous man abandoning his smithing "removed further up in the country and of his own strength set upon making iron." This infant effort found inception and birth, and was cradled into vigorous growth upon the banks of the picturesque Manatawny, thirteen miles from Reading and near the present village of Douglassville, in the southeastern part of the present County of Berks. The enterprise of Rutter was a bloomery forge, called Pool Forge. Another forge was also about the same time built higher up the same stream. Here in one of the valleys of Berks and upon the banks of one of its most picturesque streams, were ignited the vulcan fires of the iron industries of Pennsylvania. And to-day, after nearly a century and three-quarters, their sulphurous and luminous flames still burn and from the little forge and furnace on the Manatawny in Berks, the manufacture of iron in Pennsylvania has developed into an investment of hundreds of millions of capital, and employment of hundreds of thousands of human beings.

Following up the venture of Rutter in 1720, James Lewis and Anthony Morris erected "the first built furnace of Pennsylvania" at Colebrookdale, Berks, then Philadelphia County.

There have been various attempts by other localities to deprive the valley of the Manatawny, in the County of Berks, of the merited glory of giving birth to the great industry of Pennsylvania. That distinguished authority, James M. Swank, the Secretary of the American Iron and Steel Association, says: "The truth and history will not be violated if we award ungrudgingly to Thomas Rutter, the honor of having erected the first blast furnace, as well as the first forge in Pennsylvania."

As we have said, the forge stood on Manatawny Creek in Berks County. We will let Mr. Swank complete this interesting narrative. "Colebrookdale Furnace was located in Berks County, on Ironstone Creek, a branch of the Manatawny. It stood about eight miles north of the mouth of the stream, and about three-fourths of a mile west of the present town of Boyertown, and about two hundred yards from the Colebrookdale Railroad. Plenty of cinder marks the exact site. A grist and saw-mill stands about one hundred feet distant. It would seem that friendly indians were employed at the furnace, as "Indian John" and "Margalittia" are found in the list of workmen about 1728. * * * A stove-plate cast at this furnace in 1763, and so inscribed, was exhibited at the Philadelphia Exhibition. In 1731, pig iron sold at Colebrookdale Furnace "in large quantities." * * It is an interesting coincidence that the first furnace in England to cast pots, kettles and other hollow-ware, by the use of sand moulds, was Abraham Darby's Colebrookdale Furnace, in Shropshire, which he leased in 1709."

The County of Berks was not only the birth place of the iron industry of Pennsylvania, but up to the time of the Revolution 1776-81, was the scene of the greatest activity in that important branch of enterprise and stimulated similar ventures in the adjoining counties.

In 1735, David Jones, a Welshman, the ancestor of that distinguished son of Berks, J. Glancy Jones, occupied a tract of 1,000 acres of land in Caernarvon Township, Berks County, which a half century before had been sold by the founder of the Province to a Welsh company, and soon became one of the foremost iron masters.

In 1749, Charming Forge, near Womelsdorf was built, and was

still active in 1881. In 1759, William Bird, an Englishman erected Hopewell Furnace on French Creek, in Caernarvon Township, still in operation in 1881, and it is said in 1740, he built a forge at the now enterprising borough of Birdsboro. He also built Roxborough Furnace, afterwards named Berkshire, in Heidelberg Township, before 1763. Upon the demise of this energetic man, in that year, his son Mark, perpetuating the energy and abilities of his progenitor, built a rolling and slitting mill and a nail factory, at the mouth of Hay Creek and named the place Birdsboro in honor of his father. Since that time these works expanding in capacity and importance under the proprietorship and management of Edward and George Brooke, have risen to the first rank among establishments of the kind in the State, and have made Birdsboro to-day one of the most important iron producing centres in the County. Mark Bird also built Spring Forge, in Oley, in 1797, and Gibraltar Forge in Robeson Township. The Oley Furnace, eleven miles northeast of Reading, was built by Udree in 1770, and in 1882 was still in operation. The Oley Forge, on Manatawny Creek was built also by Udree in 1780, it was still in operation in 1856, and the Green Tree Forge in 1770.

The iron product of the forges and furnaces of the Village of the Manatawny, was conveyed to Philadelphia in boats somewhat resembling a large Indian canoe, from forty to sixty feet long and eight to ten feet wide, and were propelled by poles and sometimes towed by men.

THE DEVELOPMENT OF IRON MANUFACTURE.

The exhaustive, but successful struggle against the despotic power of the English King and Parliament, and the establishment of a free and independent government upon the ruins of British domination over the thirteen colonies of North America, was soon followed by a revival of iron industry on a larger scale. During the revolution many of the furnaces in Berks and adjacent Counties, cast cannon, shot and shell, by direction of Congress, for the use of the Continental armies. In Berks County, in 1793, George Ege built the Reading Furnace in Heidelberg Township, which was in operation until 1850; the Sally Ann built in 1791, was in

operation 1856, the Joanna Furnace in Caernarvon Township built in 1792, rebuilt in 1847, is still, 1882, in operation ; the Mary Ann, built in 1792, was in operation in 1856. Of the forges of early date, not mentioned, were the two Rockland Forges, six miles east of Kutztown, built in 1788 and 1790, and the two District Forges, in Pike Township, built in 1797 and 1800.

THE EXTENT AND DEVELOPMENT OF IRON MAKING IN BERKS.

In 1798, there were 6 furnaces and 6 forges in the County of Berks, and in 1805, 8 furnaces, 20 forges, 9 tilt hammers, and 1 slitting mill, out of a total in the State, of 31 furnaces, 72 forges, 12 tilt hammers, 2 steel furnaces and 11 slitting mills. At this time the County of Berks was still foremost in the Commonwealth, in the production of raw iron, no other county even approximating it in this industry. In 1832, there were 11 furnaces and 21 forges in the County. In 1850, there were 13 furnaces, ranking seventh in the Commonwealth, 23 forges and bloomeries, ranking first, and 5 rolling mills, in this branch ranking third. In 1876, Berks had 27 blast furnaces, thus forging ahead, reaching the second rank, 2 forges and bloomeries being third, and 10 rolling mills giving Berks also the third place.

The County of Berks in the census year of 1880 produced 213,580 net tons of pig and rolled iron and steel and blooms, ranking eighth in the list of fifteen Counties of the first-class in the United States, namely: Allegheny, Lehigh, Northampton and Cambria Counties in Pennsylvania; Cook County in Illinois; Dauphin County in Pennsylvania and Mahoning County, Ohio, alone preceding it. The total of production in Berks County, in the census year of 1880, was within 30,000 tons or 87 per cent. of the total product of New Jersey, more than one-half that of Illinois and not much less than one-half the whole product of New York.

THE FOUNDING OF THE MANUFACTURING INDUSTRIES OF READING.

In taking a retrospective view of the industrial development of the City of Reading, we find that prior to 1836, the borough was

without manufactures of any kind, save of wool hats, boots and shoes and stoneware. In the first article, Reading was famous from the earliest years of the century. About the year named, the superabundant advantages of Reading, as a manufacturing centre, began to be felt and appreciated. The iron and nail works built and owned by Messrs. Keim, Whitaker & Co., which included a rolling mill, puddling mill and nail factory, in the southern part of the City, on the Schuylkill, ranked from the beginning with the most extensive establishments of the kind in the United States, and were subsequently known under the firm name of Seyfert, McMarus & Co., now the Reading Iron Works. There were also the iron and brass foundry of Darling, Taylor & Co., adjoining the above establishments, the locomotive engine manufactory and machine shop of D. H. Dotterer & Co., on the Canal just above the Lancaster Bridge; the stationery steam engine and rifle barrel manufactory of Wm. G. Taylor on Water street near Penn, the foundry of Adam Johnson, on the corner of Chestnut and Eighth streets; the auger manufactory of Rankin & Phillips; the steam saw and chopping mill, of Ferry & Frill; three shops for the manufacture of horse-power threshing machines, ploughs and other agricultural implements and two flouring mills, one owned by George Smith, producing 8,000 barrels of flour a year. In 1842, following up this surprising exhibition of enterprise, Isaac Eckert, who had established himself in business in Womelsdorf in 1821, and in 1828, removed to Reading, in company with his brother, built the first furnace which he named after the great Whig Statesman, Henry Clay, and laid the foundation of the vast establishment, which still figures amongst the active industries of Reading. From this beginning the manufacturing interests of the City, sprang.

THE RELATIVE POSITION OF BERKS COUNTY IN IRON MANUFACTURE.

In the list of centres of the important metallurgical industries of the United States, the County of Berks as already shown in the census of 1880, ranked eighth. In the number of blast furnaces

the County ranks among the first in the State of Pennsylvania and the United States.

BLAST FURNACES.

The following list is taken from the latest official sources, principally the annual reports of the Secretary of Internal Affairs of the Commonwealth of Pennsylvania, Industrial Statistics 1880-81, and the Secretary of the American Iron and Steel Association, and is for the year ending Dec. 31, 1881.

BECHTELSTVILLE FURNACE, Bechtelsville Iron Co., Bechtelsville, on the Colebrookdale Railroad 15 miles E. of Reading, 1 stack built 1875, produced 6,104 tons, foundry and grey forge, annual capacity 12,000 tons, hot-blast, anthracite and coke.

KEYSTONE FURNACE, Keystone Furnace Co., Reading, on the Philadelphia and Reading R. R., 2 stacks built 1869 and 1872, produced 16,793 tons, A. No. 1, annual capacity 20,500 tons, hot-blast anthracite.

MONOCACY FURNACE, Monocacy Furnace Co., Monocacy, on the Philadelphia and Reading R. R., 10½ miles S. E. of Reading, 1 stack, produced 6,185 tons foundry iron, capacity 8,129 tons, hot-blast, anthracite. This furnace was originally built at Hopewell in 1852, and removed to Monocacy in 1854.

MOSELEM FURNACE, Moselem Iron Co., Moselem, on the Schuylkill and Lehigh R. R., 13 miles N. of Reading, 1 stack, produced 3,827 tons, foundry iron, capacity 4,000 tons, hot-blast, anthracite. This furnace was built in 1823 and rebuilt in 1872.

ROBESONIA FURNACE, Ferguson, White & Co., Robesonia, on the Lebanon Valley R. R., 12½ miles W. of Reading, 1 stack built 1845, rebuilt 1858, produced 9,000 tons Bessemer iron, capacity 10,000 tons, hot-blast, anthracite.

ROCKLAND FURNACE, 16 miles N. E. of Reading, and about 3 miles from Bower's on the East Pennsylvania R. R., 1 stack, capacity 1,000 tons charcoal. Out of blast, Dec. 31, 1880.

TEMPLE FURNACE, Temple Iron Co., Temple Station, East Pennsylvania R. R., 5 miles N. of Reading, 1 stack, built 1867, produced 5,733 tons foundry iron, capacity 10,000 tons, hot-blast, anthracite.

EAST PENN FURNACE, Philadelphia and Reading Coal and Iron Company, Lyon's Station, East Pennsylvania R. R., 15 miles N. E. of Reading, 2 stacks, built 1874-5, capacity 10,000 tons, hot-blast, anthracite. Out of blast.

MOUNT LAUREL FURNACE, Clymer Iron Co., near Temple Station, East Pennsylvania R. R., 5 miles N. of Reading, 1 stack, produced 2,336 tons, foundry iron, capacity 4,013 tons, hot-blast, anthracite. This furnace was built in 1836, using charcoal, rebuilt in 1847, and changed to anthracite 1873.

OLEY FURNACE, Clymer Iron Co., Oley, 9 miles E. of Reading, 1 stack, built in 1770, produced 1,800 tons, car-wheel iron, annual capacity 1,800 tons, cold-blast, charcoal.

- LEESPORT FURNACE, Leesport Iron Co., Leesport, on the Philadelphia and Reading R. R., 8 miles N. of Reading, 1 stack, built —, produced 10,766 tons, foundry iron, annual capacity 10,800 tons, hot-blast, anthracite.
- JOANNA FURNACE, L. B. Smith & Co., Joanna Furnace, P. O., 18 miles S. of Reading, on the Wilmington and Northern R. R., 1 stack, built in 1792, rebuilt in 1847, produced 1,240 tons charcoal iron, capacity 1,500 tons, cold-blast, charcoal.
- READING IRON WORKS FURNACE, Reading Iron Co., Reading, on the Philadelphia and Reading R. R., 2 stacks, built 1854 and 1874, produced 13,860 tons Nos. 1, 2 and 3 forge iron, capacity 20,000 tons, hot-blast, anthracite and coke.
- HENRY CLAY FURNACES, Eckert & Bro., Reading, on the Philadelphia and Reading R. R., 2 stacks, built 1842, produced 15,174 tons, foundry and forge iron, capacity 18,000 tons, hot-blast, anthracite.
- HAMPTON FURNACE, E. & G. Brooke Iron Company, Birdsboro, on the Wilmington and Northern R. R., 11 miles S. E. of Reading, 1 stack, built in 1846, produced 254 tons, capacity 1,000 tons, hot-blast, charcoal.
- KEYSTONE FURNACES, E. & G. Brooke Iron Company, Birdsboro, on the Philadelphia and Reading and Wilmington and Northern R. R., 9 miles S. E. of Reading, 3 stacks, built in 1853, 1871 and 1873, produced 16,801 tons forge iron, &c., capacity 40,000 tons, hot-blast, anthracite.
- HOPEWELL FURNACE, Clingan & Buckley, near Douglassville, on the Philadelphia and Reading R. R., 13½ miles S. of Reading, 1 stack, first built in 1759, produced 1,000 tons, car-wheel iron, capacity 1,000 tons, cold-blast, charcoal.
- TOPTON FURNACE, Tipton Iron Co., Tipton, on the East Pennsylvania R. R., 18½ miles N. E. of Reading, 1 stack, built, 1873, produced 7,817 tons, foundry iron, capacity 8,000 tons, hot-blast, anthracite.
- KUTZTOWN FURNACE, Kutztown Iron Co., Kutztown, on the Allentown Branch of the East Pennsylvania R. R., 23 miles N. E. of Reading, 1 stack, built 1875, produced 7,145 tons, foundry and forge iron, capacity 7,200 tons, hot-blast, anthracite.
- MAIDEN CREEK FURNACE, Spang & Co., Lenhartsville, on the Schuylkill and Lehigh R. R., 19 miles N. of Reading, 1 stack, built 1854, capacity 2,000 tons, product car-wheel iron, cold-blast, charcoal. Made no returns.
- UNION FURNACE, H. B. Fisher & Co., near Hamburg, on the Philadelphia and Reading R. R., 18 miles N. of Reading, 1 stack, capacity 1,000 tons, product, car-wheel iron, cold-blast, charcoal. Made no returns.
- MOUNT PENN FURNACE, near Reading, Wm. M. Kauffman & Co., by wagon road, 3 miles W. of Reading, 1 stack, built in 1830, capacity 1,500 tons, cold-blast, charcoal.

The following is a list of the recently abandoned furnaces in Berks County, reported in 1880.

- MARY ANN FURNACE, Longswamp, Horatio Trexler, charcoal, built 1797. Out of blast since 1869.

PARADISE FURNACE, Reading, Horatio Trexler, built in 1821, charcoal.

SALLY ANN FURNACE, Bower's Station, Daniel S. Hunter, built in 1791, charcoal.

The abandonment of these furnaces was owing to the deundation of the mountains, of the forests and the introduction of improved appliances in iron making, and difficulties of transportation.

These furnaces aggregating 27 stacks, employed 905 persons, \$298,070 were paid in wages, and produced 126,833 tons of pig iron. The average amount per ton paid in wages in Berks, was \$2.35. The average amount of the same for the entire State, was \$2.96, demonstrating the advantages of Berks for the manufacture of pig iron in point of economy of wages. In the number of stacks, but one County, Lehigh with 29, and in the number of tons produced, but 3 Counties, Lehigh, Allegheny and Northampton, outranked Berks. Of the entire list of furnaces, but 2 were out of blast in 1881.

The ores used in the furnaces of the County of Berks and City of Reading, are principally native, and are taken largely from properties owned by the proprietors of the furnaces themselves. Of late years a considerable quantity of Lake Superior, Spanish and other domestic and foreign ores have been used for mixing with native ores, and it is said, producing very good results.

The facilities afforded by the Reading and other Railroad Companies for the transportation of ores, limestone and fuel, are of incalculable advantage, and enable manufacturers to make a choice of such raw materials, as will best serve their purposes. Under the head of transportation it will be seen that the Reading system of Railroads reaches no less than 85 anthracite and charcoal furnaces.

BLOOMERIES.

Under the head of bloomeries is embraced all works in which blooms were hammered from pig or scrap iron. In 1876, there were no works in Pennsylvania which made blooms from ore. The County of Berks had five of the nineteen bloomeries in the State, in 1880. On December 30, 1881, four bloomeries were in operation. The following is a list of bloomeries in Berks County.

CHARMING FORGE, Womelsdorf, 15 miles from Reading, on the Lebanon Valley R. R., W. & B. F. Taylor, produced 72 tons, blooms and hammered bar iron, capacity 1,000 tons. Very old forge.

EXETER FORGE, Jacksonwald, 4 miles from Reading, by road, Morgan J. Althouse, produced 240 tons of blooms.

KNAUER & KAUFFMAN'S FORGE, Knauer's P. O. No report.

MOUNT AIRY FORGE, Shartlesville, Thomas E. Williams, built 1840, water-power, product, blooms. No report.

NORTH KILL FORGE, Shartlesville, product, blooms. Idle for several years.

SCHUYLKILL FORGE, B. F. Morret, Douglassville, produced 1,403 tons.

SIMON SEYFERT & CO., Gibraltar, $5\frac{1}{2}$ miles S. of Reading, and 1 mile from Gibraltar Station on the Wilmington and Northern R. R. No report.

ROLLING MILLS.

In the number and product of the rolling mills, the County of Berks ranks third in the Commonwealth of Pennsylvania. The following comprises the list and product, Dec. 31, 1881.

BLANDON IRON WORKS, Blandon, 8 miles from Reading, on the East Pennsylvania R. R., Blandon Iron Co., produced 4,668 tons, skelp, band and hoop.

GIBRALTAR IRON WORKS, Gibraltar, 7 miles S. of Reading near the Wilmington and Northern R. R., S. Seyfert & Co., produced 1,000 tons, boiler-tube iron.

HAMBURG ROLLING MILL, Hamburg, 17 miles N. of Reading, on the Philadelphia and Reading R. R., Philadelphia and Reading Coal and Iron Co., built 1865, capacity 4,000 tons, product, muck and bar iron of high class.

KEYSTONE IRON WORKS, Reading, on the Philadelphia and Reading R. R., built 1857, produced 3,062 tons, plate iron.

McILVAIN, WM. & SONS, Reading, on the Philadelphia and Reading R. R., built 1857, produced 5,000 tons, boiler plate, tank, pipe and bridge iron.

PHILADELPHIA AND READING ROLLING MILL, Reading, Philadelphia and Reading Coal and Iron Co., on the Philadelphia and Reading R. R., built 1868, produced 25,583 tons, steel and iron rails, splice bars, &c.

PINE IRON WORKS, Pine Iron Works, P. O., near the Colebrookdale R. R., Jos. L. Bailey & Co., built 1845, produced 2,793 tons, boiler plate iron.

READING IRON WORKS, Reading, on the Philadelphia and Reading R. R., built 1836, rolling mill built 1862, produced 6,125 tons skelp iron, sheet mill produced 8,896 tons, plate.

READING BOLT AND NUT WORKS, Reading, on the Lebanon Valley R. R., J. H. Sternberg & Co., produced 2,931 tons, bar, bolt, rod, band and rivet iron.

BIRDSBORO ROLLING MILL AND NAIL WORKS, (Anchor Brand Nail Works,) Birdsboro, 9 miles S. of Reading, on the Philadelphia and Reading R. R., and Wilmington and Northern R. R., The E. & G. Brooke Iron Co., built 1848, produced 191,249 kegs of nails and 12,255 tons of muck, bar and nail plate. The annual capacity is 240,000 kegs of nails of 100 lbs. each.

These are among the extensive works of the kind in the United States and produce the celebrated Anchor Brand of nails.

SEYFERT ROLLING MILL, Seyfert, on the Wilmington and Northern R. R., 4 miles S. of Reading, Samuel R. Seyfert, built 1880, annual capacity 3,000 tons, product, boiler and boiler tube iron, iron pipe, &c.

GLENDALÉ ROLLING MILL, Manatawny Station, on the Colebrookdale R. R., 22 miles S. E. of Reading, Bailey & Shoemaker, built 1882. Just reported.

The total number of hands employed was 1,751, wages paid, \$638,008, and produced 72,307 tons of plate iron, &c., and 191,249 kegs (100 lbs. each) of nails, (9,562 tons), at an average cost on the amount of wages paid, \$7.79 per ton. The average amount per ton paid in wages in the State was \$13.65.

IRON FOUNDRIES.

In iron foundries, the County of Berks ranks among the first in the State of Pennsylvania. In the amount of iron castings, the aggregate production in 1880 amounted to 21,000 tons. In brass castings the aggregate was 1,000 lbs. The following is a list of foundries.

BERNVILLE FOUNDRY AND MACHINE SHOP, Bernville, capacity 10 tons, product, agricultural and mill work.

FLEETWOOD FOUNDRY AND MACHINE SHOP, Fleetwood, castings 500 tons, product, engines, mining and agricultural machinery.

FRANKLIN IRON WORKS, Reading, castings 1,200 tons, product, engines, cars, castings of every description. A new pumping engine built for the Phoenix Iron Work's mines at Boyertown, is reported as a wonderful piece of mechanism.

KUTZTOWN IRON FOUNDRY AND MACHINE SHOP, Kutztown, castings 240 tons iron; 700 lbs. brass, product, engines, mill, mining and slate machinery.

MELLERT FOUNDRY AND MACHINE CO., Limited, Reading, castings 2,489 tons, product, machinery and other castings. This extensive establishment has executed a number of large contracts with New York and other Cities, for water pipes from the smallest sizes up to the largest (48 inches in diameter) made, also gas pipe of various sizes.

PENN HARDWARE CO., Reading, castings 1,000 tons iron, product, builders hardware.

READING STOVE WORKS, Reading, castings 2,300 tons, product, stoves, heaters and ranges.

WM. H. ROBINSON —————, castings 100 tons, product, engines and iron working machinery.

SCOTT FOUNDRY, Reading, iron castings, 2,996 tons, product, general machinery. This establishment has turned out during its long existence some of the finest quality of work in the United States. During the Rebellion, 1861-65, some of the largest calibre naval ordnance was cast here. The later work done at this establishment, includes cotton presses weighing over 100 tons, vertical engines, horizontal engine for the Pine Iron Works, and the celebrated Lyman-Haskall accelerating cannon for coast and harbor defense, to throw a 150 lb. projectile, with 130 lbs. charge, 12 miles, and warranted to penetrate 2 feet of wrought iron at 200 yards. Nearly 19,000 lbs. of metal were used in the casting.

THE READING BUTT WORKS, Reading, produced, iron castings, 1,100 tons, brass castings, 500 lbs.

CENTRAL FOUNDRY AND MACHINE SHOP, Reading, produced iron castings 400 tons, engines, shafting, pulleys and repairing.

BOYERTOWN MACHINE SHOP, Boyertown, produced feed cutters. No report.

DERR PLOW AND STOVE WORKS, produced iron castings 90 tons, brass castings, 259,249 lbs.

GLASS MANUFACTURE.

The City of Reading does not appear as a participant in the important glass manufacturing industries of Pennsylvania. The abundance and convenience of raw materials in Berks County are notable. The propriety of establishing glass works for the manufacture of bottles at Reading is now under consideration. The promoter of this enterprise, Mr. F. P. Heller, has received much deserved encouragement.

STOVE FOUNDRIES.

The manufacture of stoves is a comparatively new feature in the iron industries of the City of Reading, and is not only eminently creditable to the enterprise of the parties themselves, but demonstrates very satisfactorily the advantages possessed by Reading over all competitors for establishments in any branch of iron industry. The City of Reading to-day, manufactures more in this class, reported, than any County in the State, save Philadelphia, and promises to become a chief centre of this branch of manufacture. The following works were reported Dec. 31, 1881.

READING STOVE WORKS, Reading, produced iron castings 2,524 tons of stoves, heaters, ranges and hollow-ware.

MT. PENN STOVE WORKS, Reading, produced iron castings, 480 tons stoves heaters, ranges and hollow-ware.

This industry employed 299 persons, the amount of wages paid being \$125,698. The average rate of wages paid per ton was \$43.30.

The following miscellaneous industries in metals in Berks County were reported to the Department of Internal Affairs to Dec. 31, 1881.

BRASS AND BRONZE.

BRASS CASTINGS, Steam Engines, Machinery of all kinds, Miller, Printz & Co., 9 tons.

FORGINGS.

FORGINGS, Iron Car Hooks, &c., R. B. Seidel, produced, castings 420,000 lbs.

FORGINGS, General Machine and Marine, Reading Iron Works, produced castings, 639 tons, iron pipes and tubes

IRON PIPES and Tubes, wrought welded, Reading Iron Works, flues 3,692.06, pipe 16,774.09—20,466 tons 15 cwt.

The advantage to a city in having its manufacturers make full reports to the Department of Internal Affairs, for publication in the annual exhibit of Industrial Statistics, cannot be too strongly urged. It gives a city prominence in the list of competitors in the line of manufactures and invites trade by affording those interested, an opportunity to compare the extent of its manufactures with those of other centres.

STEEL.

It is a remarkable fact that, the County of Berks with its great iron establishments and superior ores, is not a participant in the important and growing Bessemer steel industry of the United States. No locality in the County affords finer facilities for this production than the City of Reading. At one time one of the largest establishments of this character, seriously contemplated selecting this City, but for reasons not insuperable the enterprise was located elsewhere.

RECAPITULATION OF IRON MANUFACTURES.

The census of the United States, 1880, gives the following statistics of the production and manufactures of iron in the County of Berks during that year.

The County of Berks including the City of Reading.

Iron and steel, 33 establishments, capital, \$5,365,118 ; hands employed, males, over 16 years, 2,949 ; children and youth, 99 ; wages paid during the year, \$1,123,946 ; value of materials, \$5,409,091 ; value of products, \$7,730,512.

Iron castings, 7 establishments, capital \$432,465 ; hands, males, over 16 years, 315 ; children and youth, 14 ; wages paid during the year, \$105,908 ; value of materials, \$169,808 ; value of products, \$348,477.

Iron forgings, 2 establishments, capital \$53,200 ; hands, males, over 16 years, 43 ; wages paid during the year, \$16,816 ; value of materials, \$60,313 ; value of products, \$78,592.

Iron, nails and spikes, cut and wrought, 1 establishment, capital, \$6,000 ; hands, males, over 16 years, 4 ; wages paid during the year, \$572 ; value of materials, \$17,775 ; value of products, \$19,040.

Iron, bolts, nuts, washers and rivets, 1 establishment, capital, \$8,000 ; hands, males, over 16 years, 4 ; children and youth, 3 ; wages paid during the year, \$835 ; value of materials, \$1,125 ; value of products, \$2,000.

Iron pipe, wrought, 1 establishment, capital, \$1,000,000 ; hands, males, over 16 years, 600 ; children and youth, 100 ; wages paid during the year, \$240,000 ; value of materials, \$2,000,000 ; value of products, \$3,000,000.

The aggregate extent, value and importance of the metallurgical industries of Berks in 1880, were as follows :

Establishments, 45 ; capital, \$6,864,783 ; hands employed, males, over 16 years, 3,915 ; children and youth, 216 ; wages paid during the year, \$1,488,077 ; value of materials, \$7,658,112 ; value of products, \$10,178,612.

The census reports do not furnish a detailed statement, giving a complete exhibit of the iron industries of the City of Reading, apart from the County. The City, however, has the larger share of the aggregates stated.

THE GENERAL INDUSTRIES OF READING.

Owing to the want of proper facilities for obtaining full information on the important subject of the general industries of the City

of Reading, the writer has been compelled to avail himself of such material as he has at hand. The appended list, however, will answer every purpose, for while approximately correct, it will suffice to show to what extent the citizens of Reading are engaged in every department of productive industry. It will also demonstrate by the practical evidences of the past and visible development of the present, that but few localities in the United States of equal population, can present greater advantages and more successful results as a manufacturing centre, than the City of Reading. We have already shown the amazing development of the mining and iron industries of the City and adjacent County.

LIST OF GENERAL MANUFACTURES.

The appended list will give a comprehensive view of the extent and diversity of the mechanical industries of the City of Reading and surrounding political division, except of iron, which have been presented separately.

Under the head of each industry, is given a summarized statistical statement of its extent, value and importance in 1880, taken from the table of manufactures for the City of Reading and for the County of Berks, including the City of Reading, prepared under the direction of the Superintendent of the Tenth Census of the United States. When it is stated "in the County," it is understood that the industries of Reading are included in that aggregate. The statistics of Reading when available are given by themselves :

AGRICULTURAL IMPLEMENTS,—The establishment of Mr. Samuel Lessig, from a report received, includes the manufacture and repair of all kinds of agricultural implements. Mr. Lessig is also the inventor of the Lessig Pet Grain Thresher, Separator and Cleaner, one of the best machines in the market, requiring the least power, is compact, simple and durable. The market of these establishments is Berks and adjacent counties.

In 1880, in the County, 9 establishments, capital, \$99,812 ; hands employed, 84 ; wages paid during the year, \$24,668 ; value of materials, \$17,880 ; value of products, \$71,993.

In the City, 3 establishments, capital, \$2,450 ; hands employed, 7 ; wages paid during the year, \$1,992 ; value of materials, \$2,100 ; value of products, \$5,500.

BAGS, Paper.—In the City, 1880, 1 establishment, capital, 400 ; hands employed, 1 ; wages paid during the year, \$150 ; value of materials, \$1,500 ; value of products, \$2,000.

BASKETS, Rattan and Willow-ware.—In 1880, in the County, 4 establishments, capital, \$580 ; hands employed, 6 ; wages paid during the year, \$1,190 ; value of materials, \$1,850 ; value of products, \$5,150.

In the City, 3 establishments, capital, \$400 ; hands employed, 6 ; wages paid during the year, \$1,190 ; value of materials, \$1,750 ; value of products, \$4,450.

BEER AND ALE.—The brewing industry of Reading is large. The product has also a high reputation all over the United States for quality. There is also a large demand for Reading beer in the adjacent States. The report for the census year is not completed.

BLACKSMITHING.—In the City, 1880, 8 establishments, capital, \$7,450 ; hands employed, 21 ; wages paid during the year, \$6,800 ; value of materials, \$6,165 ; value of products, \$20,184.

In the County, 1880, 113 establishments, capital, \$72,270 ; hands employed, 115 ; wages paid during the year, \$21,295 ; value of materials, \$45,371 ; value of products, \$120,218.

BOATS.—2 establishments in 1881. This is an important industry in Reading. The boat yards of John A. Hiester and Krick & Co., have turned out a large number of superior boats and barges of standard dimensions, which are now in use on the Schuylkill Navigation and Erie Canals and other inland water routes in Pennsylvania and New York. Connected with the Hiester Yard is a commodious dry dock. No separate report of this industry is given in the census abstract.

BOILERS.—4 establishments in 1881. The productions of this branch of industry in Reading, occupies a high reputation in all parts of the United States. The Reading boilers are said to possess better workmanship, better quality of iron and more durability, than any other establishments of the kind in the United States. No separate report for the census year,

BOLTS AND NUTS, 2.—The Reading nuts, bolts and washers have a high reputation for quality. They are shipped to all parts of the United States, Canada and through exporters to Europe. This industry represents a large investment of capital and employment of labor. No location in the United States possesses superior advantages for this work. No separate report of this industry is given for the census year.

BOOK BINDING.—In the City, 1880, 2 establishments, capital, \$3,600 ; hands employed, 8 ; wages paid during the year, \$1,700 ; value of materials, \$1,250 ; value of products, \$5,800

BOOTS AND SHOES.—In the City, 1880, 18 establishments, capital, \$90,025 ; hands employed, 125 ; wages paid during the year, \$32,865 ; value of materials, \$66,840 ; value of products, \$113,947 The market is the supply of local demand.

In the County, 1880, 91 establishments, capital, \$133,242 ; hands employed, 179 ; wages paid during the year, \$42,776 ; value of materials, \$100,015 ; value of products, \$183,979.

BOOTS AND SHOES, Uppers.—In the County, 1880, 1 establishment, capital, \$700; hands employed, 7; wages paid during the year, \$2,000; value of materials, \$7,000; value of products, \$9,500.

BOXES, Cigar.—In the City, 1880, 3 establishments, capital, \$10,750; hands employed, 16; wages paid during the year, \$5,100; value of materials, \$25,450; value of products, \$44,800.

In the County, 1880, 4 establishments, capital, \$10,950; hands employed, 17; wages paid during the year, \$5,180; value of materials, \$25,750; value of products, \$45,450.

BOXES, Fancy and Paper.—In the City, 1880, 4 establishments, capital, \$3,800; hands employed, 16; wages paid during the year, \$3,160; value of materials, \$4,750; value of products, \$10,800;

BRACKETS.—1 establishment, 1881.

BRASS CASTINGS, &C., 2.— These works turn out a large supply of brass castings and manufacturer's supplies, including brass and iron valves and cocks. No detailed report in the census abstract.

BREAD, CRACKERS AND OTHER BAKERY PRODUCTS.—In the City, 1880, 28 establishments, capital, \$41,300; hands employed, 87; wages paid during the year, \$25,725; value of materials, \$71,950; value of products, \$139,480.

In the County, 1880, 30 establishments, capital, 41,800; hands employed, 89; wages paid during the year, \$26,137; value of materials, \$78,023; value of products, \$147,280.

BRICK AND TILE.—These establishments produce an excellent quality of brick, which is almost wholly consumed in home consumption.

In the City, 1880, 10 establishments, capital, \$197,600; hands employed, 181; wages paid during the year, \$38,617; value of materials, \$81,408; value of products, \$169,424.

In the County, 1880, 25 establishments, capital, \$216,570; hands employed, 316; wages paid during the year, \$51,978; value of materials, \$87,297; value of products, \$197,269.

BRUOMS AND BRUSHES.—In the City, 1880, 9 establishments, capital, \$8,128; hands employed, 29; wages paid during the year, \$7,375; value of materials, \$16,600; value of products, \$38,900.

BURR MILL STONES.—1 establishment, 1881.

CANDLES.—1 establishment, 1881.

CARPENTERING.—In the City, 1880; 14 establishments, capital, \$77,850; hands employed, 108; wages paid during the year, \$34,187; value of materials, \$66,442; value of products, \$131,954.

In the County, 1880, 20 establishments, capital, \$82,300; hands employed, 115; wages paid during the year, \$35,617; value of materials, \$75,392; value of products, \$147,954.

CARPETS, Rag.—The looms of Reading are celebrated for the excellence of their product in carpets for home use.

In the City, 1880, 7 establishments, capital, \$4,300; hands employed, 40;

wages paid during the year, \$10,470; value of materials, \$12,100; value of products, \$31,543.

In the County, 1880, 8 establishments, capital, \$6,300; hands employed, 41; wages paid during the year, \$10,476; value of materials, \$12,650; value of products, \$32,243.

CARRIAGES AND WAGONS.—Some of the finest styles of carriage architecture are turned out at these establishments, and in service are superior to those brought from abroad.

In the City, 1880, 4 establishments, capital, \$22,300; hands employed, 52; wages paid during the year, \$15,000; value of materials, \$20,000; value of products, \$47,100.

In the County, 1880, 12 establishments, capital, \$51,800; hands employed, 88; wages paid during the year, \$26,096; value of materials, \$39,000; value of products, \$87,208.

CARRIAGE AND WAGON MATERIALS.—In the County, 1880, 2 establishments, capital, \$5,500; hands employed, 7; wages paid during the year, \$1,100; value of materials, \$2,500; value of products, \$4,600.

CHAIRS.—3 establishments, 1881.

CHOCOLATE.—1 establishment, 1881.

CLOTHES WRINGERS.—1 establishment, 1882.

CLOTHING, Men's.—In the City, 1880, 9 establishments, capital, \$150,100; hands employed, 198; wages paid during the year, \$42,805; value of materials, \$113,763; value of products, \$176,600.

In the County, 1880, 33 establishments, capital, \$162,091; hands employed, 217; wages paid during the year, \$45,334; value of materials, \$134,777; value of products, \$209,512.

COFFEE AND SPICES, Roasted and Ground, 2 establishments, 1881, in the City, 1880, 1 establishment, capital, \$6,000; hands employed, 2; wages paid during the year, \$1,350; value of materials, \$5,500; value of products, \$7,000.

COFFINS, BURIAL CASES AND UNDERTAKER'S GOODS.—In the City, 1880, 4 establishments, capital, \$17,900; hands employed, 9; wages paid during the year, \$3,650; value of materials, \$9,050; value of products, \$19,300.

CONFECTIONERY.—In the City, 1880, 8 establishments, capital, \$20,100; hands employed, 27; wages paid during the year, \$7,600; value of materials, \$28,400; value of products, \$49,600.

COOPERAGE.—In the City, 1880, 2 establishments, capital, \$3,000; hands employed, 5; wages paid during the year, \$1,860; value of materials, \$1,500; value of products, \$4,000.

COPPERSMITHING.—In the City, 1 establishment, capital, \$300; hands employed, 2; wages paid during the year, \$800; value of materials, \$500; value of products, \$1,500.

CORDAGE AND TWINE.—In the City, 1880, 1 establishment, capital, \$50,000; hands employed, 28; wages paid during the year, \$7,200; value of materials, \$50,000; value of products, \$75,000.

CORSETS.—1 establishment in 1881.

COTTON GOODS.—2 establishments in 1881 In cotton and woolen (Garner & Co.,) manufacture, the State returns, Dec. 31, 1881, show a product of 2,654,805 yards of 39 inch twilled goods.

COTTON AND WOOLEN GOODS, 2.—(Louis Kraemer & Co., and J. G. Leinbach & Co). The latter reported Dec. 31, 1881, 275,000 yards of cotton and wool mixed goods. The former, jeans and doeskins. No amount given.

In the City, 1880, (cotton), 1 establishment, capital, \$150,000 ; hands employed, 228 ; wages paid during the year, \$38,445 ; value of materials, \$83,334 ; value of products, \$125,175.

DENTISTRY, Mechanical.—In the City, 1880, 2 establishments, capital, \$3,300 ; hands employed, 4 ; wages paid during the year, \$2,000 ; value of materials, \$3,200 ; value of products, \$11,000.

In the County, 1880, 6 establishments, capital, \$6,600 ; hands employed, 6 ; wages paid during the year, \$2,480 ; value of materials, \$4,700 ; value of products, \$16,400.

DOOR, SASH AND BLINDS.—2 establishments, 1881.

DYEING AND SCOURING.—3 establishments, 1881.

ELECTRICIANS GOODS.—1 establishment, 1881.

ENGRAVING AND DIE SINKING.—In the City, 1880, 1 establishment, capital, \$500 ; hands employed, 2 ; wages paid during the year, \$936 ; value of materials, \$200 ; value of products, \$2,500.

FERTILIZERS.—In the County, 1880, 1 establishment, capital \$6,000 ; hands employed, 5 ; wages paid during the year, \$1,239 ; value of materials, \$2,905 ; value of products, \$4,500.

FILES.—In the County, 1880, 5 establishments, capital, \$6,100 ; hands employed, 12 ; wages paid during the year, \$4,145 ; value of materials, \$1,400 ; value of products, \$8,050.

FIRE APPARATUS.—1 establishment in 1881.

FIRE BRICK.—3 establishments in 1881. (See Brick and Tile).

FLOURING AND GRIST MILL PRODUCTS.—2 establishments in 1881.

FURNITURE.—12 establishments in 1881. The furniture of these establishments is of a very superior quality, and in large demand.

In the City, 1880, 6 establishments, capital, \$80,500 ; hands employed, 79 ; wages paid during the year, \$27,700 ; value of materials, \$54,235 ; value of products, \$140,230.

In the County, 1880, 28 establishments, capital, \$125,625 ; hands employed, 116 ; wages paid during the year, \$36,709 ; value of materials, \$69,441 ; value of products, \$178,382.

FURNITURE, Chairs.—In the County, 2 establishments, capital, \$850 ; hands employed, 5 ; wages paid during the year, \$1,165 ; value of materials, \$1,775 ; value of products, \$4,100.

GAS.—1 establishment, 1881.

GLUE.—In the County, 1880, 1 establishment, capital, \$500 ; hands employed, 1 ; wages paid during the year, \$140 ; value of materials, \$1,800 ; value of products, \$2,500.

GRANITE WORKS.—(See Marble and Stone Works.)

HAIR WORK.—In the City, 1880, 1 establishment, capital, \$5,000; hands employed, 2; wages paid during the year, \$600; value of materials, \$2,000; value of products, \$35,000.

HARDWARE.—In the City, 1880, 4 establishments, capital, \$422,363; hands employed, 619; wages paid during the year, \$182,562; value of materials, \$188,241; value of products, \$579,789.

In this industry, Reading has become one of the chief centres in the the United States, and the products find a large market both at home and abroad.

HAT MACHINERY.—1 establishment, 1881.

HATS & CAPS.—In the County, 1880, 1 establishment, capital, \$12,000; hands employed, 8; wages paid during the year, \$2,520; value of materials, \$11,938; value of products, \$15,938.

HATS, Wool.—Among the earliest industries of the borough of Reading, was the manufacture of “a fine quality of wool hats.” This industry has since developed to an amazing extent. At the beginning of the present year there were no less than ten wool hat factories in Reading, and fifteen in the County. The City of Reading ranks among the first wool hat manufacturing centres in the United States. The capacity of the factories of the City is 945 dozen daily, and of the County, about 800 dozen, making a product of 1,745 dozen, or 20,940 hats per day, 125,640 hats per week, or 6,533,280 hats per year, on the basis of full time and capacity. This enormous hat supply consumes as raw material, 14,699,880 pounds of wool, in the grease, equal to 4,899,960 pounds of scoured wool. With hats ranging from \$8 to \$15 per dozen, the value of the annual product of 544,440 dozen, reaches as a minimum figure, the enormous aggregate of \$4,356,520, and at the maximum \$8,166,600.

The following is a list of Wool Hat Factories taken from the *Reading Eagle* of a recent date, and approximately accurate.

IN THE CITY:

I. W. Levan & Son.....	Daily Product, 100 Dozen.
Mohn Brothers.....	“ “ 125 “
C. F. Kessler.....	“ “ 75 “
D. F. Lotz & Co.....	“ “ 70 “
Reinoehl & Co.....	“ “ 100 “
Steiff & Brothers.....	“ “ 40 “
Hendel, Brothers & Sons.....	“ “ 225 “
John R. Miller & Co.....	“ “ 120 “
Hendel, Bobst & Co.....	“ “ 50 “
Shufeldt & Alexander.....	“ “ 40 “

Daily Aggregate..... 945 Dozen.

IN THE COUNTY :

E. Z. Ammon, Gibraltar.....	Daily product,	25 Dozen.
A. J. Brumbach, Black Bear Inn.....	" "	25 "
Oliver DeHart, Black Bear Inn.....	" "	40 "
George Hendel & Co., Hendeltown.....	" "	125 "
Miller, Hornberger & Co., Mohnsville.....	" "	40 "
John K. Ruth, Mohnsville.....	" "	60 "
John Spatz, Mohnsville.....	" "	25 "
Worley & Co., Mohnsville.....	" "	30 "
Jacob Kessler, Mohnsville.....	" "	50 "
Jacob Moore, Mohnsville.....	" "	20 "
Jacob Prutzman & Co., Adamstown.....	" "	50 "
George Bollman, Adamstown.....	" "	100 "
E. H. Coldren, Adamstown.....	" "	100 "
Fichthorn & Redcay, Adamstown.....	" "	60 "
Jesse Lutz & Co., Adamstown.....	" "	50 "

Daily Aggregate..... 800 Dozen.

The Establishments in Berks County officially reported to the Secretary for Internal Affairs to Dec. 31, 1881, produced as follows :

Hendel, Bros. & Sons.....	51,000 Dozen.
George Hendel & Co.....	19,656 "
C. F. Kessler & Bro.....	6,400 "
I. W. Levan & Son.....	20,000 "
D. F. Lotz & Co.....	9,600 "
John R. Miller & Co.....	22,800 "
Jeremiah G. Mohn & Bros.....	18,000 "
W. H. Reinoehl & Co	14,351 "
J. K. Ruth.....	800 "
J. Steiff & Bro.....	6,000 "

168,607

The establishments reported gave employment to 658 persons, who received \$162,941 in wages, the average cost per dozen for wages being \$0.96.

This great industry gives employment to 1,800 hands. The advantages presented by the City of Reading and the County of Berks, in this branch of manufacturing enterprise, are convenience of raw materials, facilities of transportation, cheap fuel and skilled labor.

The census of 1880, for the County of Berks, including the City of Reading in the manufacture of wool hats, gives 17 establishments, capital \$662,500, hands employed, 891; wages paid during the year, \$248,987; value of materials; \$818,704; value of products, \$1,385,026.

HOLLOW WARE.—1 establishment, 1881.

IRON.—(See general statement of Iron Manufacture.)

JEWELRY.—1 establishment, 1881.

LACE GOODS.—1 establishment, 1881.

LEAF TOBACCO PACKING.—1 establishment, 1881.

LEATHER CURRIED.—In the City, 1880, 5 establishments, capital, \$42,867; hands employed, 28; wages paid during the year, \$10,743; value of materials, \$109,095; value of products, \$135,825.

In the County, 1880, 23 establishments, capital, \$69,747; hands employed, 40; wages paid during the year, \$12,938; value of materials, \$154,893; value of products, \$192,840.

LEATHER TANNED.—In the City, 1880; 5 establishments, capital, \$95,233; hands employed, 52; wages paid during the year, \$18,082; value of materials, \$152,224; value of products, \$184,245.

In the County, 1880, 29 establishments, capital, \$241,833; hands employed, 101; wages paid during the year, \$28,802; value of materials, \$270,851; value of products, \$362,251.

LIME.—In the County, 1880, 10 establishments, capital, \$7,675; hands employed, 20; wages paid during the year, \$3,600; value of materials, \$4,329; value of products, \$11,905.

LOCK AND GUNSMITHING.—In the City, 1880, 2 establishments, capital, \$700; hands employed, 4; wages paid during the year, \$900; value of materials, \$600; value of products, \$2,200.

In the County, 1880, 4 establishments, capital, \$4,100; hands employed, 9; wages paid during the year, \$1,285; value of materials, \$1,230; value of products, \$3,550.

LOOKING GLASSES AND PICTURE FRAMES.—In the City, 1880, 1 establishment, capital, \$2,500; hands employed, 3; wages paid during the year, \$900; value of materials, \$2,250; value of products, \$4,395.

LUMBER SAWED.—In the County, 1880, 36 establishments, capital, \$48,540; hands employed, 47; wages paid during the year, \$6,655; value of materials, \$44,173; value of products, \$79,830.

MACHINERY.—In the City, 1880, 13 establishments, capital, \$294,800; hands employed, 521; wages paid during the year, \$192,841; value of materials, \$367,236; value of products, \$681,171.

In the County, including the City, 1880, 14 establishments, capital, \$329,800; hands employed, 538; wages paid during the year, \$198,841; value of materials, \$376,236; value of products, \$701,171.

MACHINISTS AND MANUFACTURER'S SUPPLIES.—1 establishment, 1881.

MALT.—1 establishment, 1881.

MANTELS, Slate, Marble and Marbleized.—2 establishments, 1881. In the City, 1880, 1 establishment, capital, \$6,000; hands employed, 3; wages paid during the year, \$1,400; value of materials, \$1,070; value of products, \$3,700.

MARBLE AND STONE WORK.—The work of these establishments is in the highest style of monumental art. The reputation of the City in this branch of industry, is such that orders are received from adjacent counties, Philadelphia and New York.

In the City, 1880, 5 establishments, capital, \$79,500; hands employed, 32;

wages paid during the year, \$11,750; value of materials, \$44,400; value of products, \$84,600.

In the County, 1880, 14 establishments, capital, \$87,087; hands employed, 44; wages paid during the year, \$14,040; value of materials, \$50,000; value of products, \$96,600.

MATCHES.—1 establishment, 1881.

MINERAL AND SODA WATERS.—In the City, 1880, 2 establishments, capital, \$1,600; hands employed, 4; wages paid during the year, \$1,400; value of materials, \$4,200; value of products, \$7,200.

MODELS AND PATTERNS.—In the City, 1880, 1 establishment, capital, \$1,000; hands employed, 2; wages paid during the year, \$750; value of materials, \$210; value of products, \$1,155.

MATTRESS MANUFACTURERS.—6 establishments, 1881.

MUSICAL INSTRUMENTS, ORGANS AND MATERIALS.—In the County including the City of Reading, 1880, 2 establishments, capital, \$600; hands employed 2; wages paid during the year, \$750; value of materials, \$1,150; value of products, \$2,950. This branch of manufacture has since been largely increased by new enterprises. (See Organs.)

MILL STONES.—1 establishment, 1881.

NICKEL PLATING.—1 establishment, 1881.

ORGANS.—2 establishments, 1881. The Reading Organ Manufactory turns out an instrument unrivalled in tone and finish in the United States, and supplies a large and important local demand.

PAINTING.—In the County including the City of Reading, 1880, 12 establishments, capital, \$22,170; hands employed, 67; wages paid during the year, \$17,325; value of materials, \$23,165; value of products, \$51,284.

PAINTING AND PAPER HANGING.—In the City, 1880, 11 establishments, capital, \$22,100; hands employed, 65; wages paid during the year, \$17,075; value of materials, \$22,665; value of products, \$50,284.

PAINTS.—In the City 1880, 1 establishment, capital, \$22,170; hands employed, 67; wages paid during the year, \$17,325; value of materials, \$23,165; value of products, \$51,284.

PAPER.—Not specified in the City. 1880, 2 establishments, capital, \$15,000; hands employed, 81; wages paid during the year, \$18,833; value of materials, 117,698; value of products, \$153,271.

In the County, 1880, 4 establishments, capital, \$90,000; hands employed, 115; wages paid during the year, \$28,833; value of materials, 157,198; value of products, \$213,551.

PAPER BOXES.—2 establishments, 1881.

PAPER.—(See Paper, not specified). The Bushong Paper Company produces annually about 250 tons of superior quality paper, which is in large demand in Philadelphia and New York City.

PATENT MEDICINES AND COMPOUNDS.—In the City, 1880, 1 establishment, capital, \$3,000; hands employed, 6; wages paid during the year, \$900; value of materials, \$500; value of products, \$8,876.

PHOSPHATES.—1 establishment, 1881.

PHOTOGRAPHING.—In the City, 1880, 4 establishments, capital, \$5,800; hands employed, 16; wages paid during the year, \$6,935; value of materials, \$4,675; value of products, \$17,500.

In the County, 1880, 4 establishments, capital, \$5,800; hands employed, 16; wages paid during the year, \$6,935; value of materials, \$4,675; value of products, \$17,500.

PIG IRON AND BLOOMS.—(See Iron Industries.)

PLANING MILL PRODUCTS.—4 establishments, 1881.

PRINTING AND PUBLISHING.—In the City, 1880, 9 establishments, capital, \$221,400; hands employed, 197; wages paid during the year, \$62,444; value of materials, \$65,145; value of products, \$167,400.

In the County, 1880, 12 establishments, capital, \$230,900; hands employed, 202; wages paid during the year, 63,909; value of materials, \$66,845; value of products, \$173,800.

ROLLING MILL PRODUCTS.—(See general statement of Iron Industries.)

ROPE.—(See Cordage and Twine.)

RUBBER STAMPS.—2 establishments, 1881.

SADDLERY AND HARNESS.—In the City, 1880, 8 establishments, capital, \$15,000; hands employed, 20; wages paid during the year, \$6,970; value of materials, \$12,100; value of products, \$25,250.

In the County, 1880, 24 establishments, capital, \$22,705; hands employed, 31; wages paid during the year, \$8,700; value of materials, \$18,565; value of products, \$40,835.

SCALES.—1 establishment, 1881.

SHIRTS.—In the City, 1880, 3 establishments, capital, \$5,400; hands employed, 21; wages paid during the year, \$5,180; value of materials, \$12,700; value of products, \$23,800.

SHODDY.—In the County, 1880, 1 establishment, capital, \$25,500; hands employed, 17; wages paid during the year, \$1,400; value of materials, \$20,000; value of products, \$32,000.

SLATE.—1 establishment, 1881.

SOAP AND CANDLES.—In the County, 1880, 1 establishment, capital, \$7,000; hands employed, 3; wages paid during the year, \$950; value of materials, \$10,860; value of products, \$12,730.

SPECTACLES AND EYE GLASSES.—In the City, 1880, 1 establishment, capital, \$100,000; hands employed, 117; wages paid during the year, \$35,000; value of materials, \$15,000; value of products, \$60,000.

SPICE MILLS.—2 establishments, 1881.

SPOKES.—1 establishment, 1881.

STEAM ENGINES.—(See Machinery.)

STEAM AND GAS FITTINGS.—2 establishments, 1881.

STENCILS.—1 establishment, 1881.

STONE AND EARTHENWARE.—In the City, 1880, 2 establishments, capital, \$13,000; hands employed, 6; wages paid during the year, \$1,487; value of materials, \$1,475; value of products, \$5,379.

In the County, 1880, 10 establishments, capital, \$20,850; hands employed

18; wages paid during the year, \$3,717; value of materials, \$3,648; value products, \$15,079.

STOVES.—2 establishments, 1881. In this branch of industry, Reading is prominent. The establishments of Stauffer, McKnight & Co., and Orr, Painter & Co., turn out a large variety of stoves, heaters and Ranges, which, for their serviceability and success, have created an important demand in all parts of the country.

TERRA COTTA WARE.—(See Stone and Earthenware.) The Reading Terra Cotta Works manufacture a high standard of pipes for all purposes, linings, fire-brick, vases, statuary and architectural ornaments for the home and general trade.

TIN, COPPER AND SHEET IRON WARE.—In the City, 1880, 18 establishments, capital, \$67,725; hands employed, 55; wages paid during the year, \$20,930; value of materials, \$34,590; value of products, \$64,695.

In the County, 1880, 44 establishments, capital, \$101,015; hands employed, 80; wages paid during the year, \$26,472; value of materials, \$53,890; value of products, \$104,095.

TIP PRINTING.—1 establishment, 1881.

TOBACCO AND CIGARS.—In the City, 1880, 29 establishments, capital, \$76,000; hands employed, 189; wages paid during the year, \$33,200; value of materials, \$74,378; value of products, \$154,316.

In the County, 1880, 65 establishments, capital, \$169,790; hands employed, 408; wages paid during the year, \$77,655; value of materials, \$222,182; value of products, \$382,291.

TOYS AND GAMES.—In the City, 1880, 1 establishment, capital, \$2,000; hands employed, 21; wages paid during the year, \$1,000; value of materials, \$5,000; value of products, \$7,000.

UMBRELLAS AND CANES.—In the County, 1880, 1 establishment, capital, \$1,500; hands employed, 2; wages paid during the year, \$500; value of materials, \$3,000; value of products, \$5,000.

UPHOLSTERING.—In the City, 1880, 2 establishments, capital, \$600; hands employed, 5; wages paid during the year, \$1,200; value of materials, \$1,100; value of products, \$4,000.

In the County, 1880 2 establishments, capital, \$600; hands employed, 5; wages paid during the year, \$1,200; value of materials, \$1,100; value of products, \$4,000.

WATCH AND CLOCK REPAIRING.—In the County, 1880, 3 establishments, (manufacturing) capital, \$2,800; hands employed, 3; wages paid during the year, \$725; value of materials, \$735; value of products, \$3,686.

WATER AND GAS PIPE.—(See general statement of Iron Manufactures.)

The City of Reading is an important centre for this class of manufacture.

WHEELWRIGHTING.—In the City, 1880, 4 establishments, capital, \$4,650; hands employed, 12; wages paid during the year, \$3,700; value of materials, \$4,250; value of products, \$9,600.

In the County, 1880, 41 establishments, capital, \$36,530; hands employed,

58; wages paid during the year, \$12,450; value of materials, \$20,680; value of products, \$52,135.

WIG AND TOUPEES.—1 establishment, 1881.

WOOD BENDING.—1 establishment, 1881. The Anchor Bending Works, from a report received, removed from Lancaster to Reading in 1880, on account of better facilities for manufacture. They produce the Celebrated Anchor Brand of Rims, Shafts and Spokes, which have a large demand in all parts of the United States and Canada, and large orders for Europe.

WOOD TURNED AND CARVED.—In the City, 1880, 1 establishment, capital, \$16,000; hands employed, 11; wages paid during the year, \$3,500; value of materials, \$9,000; value of products, \$18,000.

WOOD AND WILLOW-WARE.—1 establishment in 1881.

WOOLEN GOODS.—In the County, 1880, 10 establishments, capital \$114,167; hands employed, 198; wages paid during the year, \$51,965; value of materials, \$171,760; value of products, \$288,692.

MISCELLANEOUS INDUSTRIES.—In the City, 1880, 25 establishments, capital, \$359,200; hands employed, 295; wages paid during the year, \$87,023; value of materials, \$289,068; value of products, \$436,748. The 25 establishments embraced in this group consists of the following industries, viz.:

Bag, Paper; Boot and Shoe, Uppers; Coffee and Spices, roasted and ground; Coppersmithing; Cordage and Twine; Engraving and Die Sinking; Fertilizers; Files; Furniture; Chairs; Hair Work; Iron Bolts, Nuts, Washers and Rivets; Iron Forgings; Iron Nails and Spikes, Cut and Wrought; Looking Glass and Picture Frames; Mantels, Slate, Marble and Marbleized; Models and Patterns; Musical Instruments; Organs and Materials; Paints; Shoddy; Soap and Candles; Spectacles and Eye Glasses; Toys and Games; Umbrellas and Canes; Watch and Clock Repairing, and Wood Turned and Carved.

THE INDUSTRIAL ESTABLISHMENTS OF THE PHILADELPHIA AND READING COAL AND IRON AND RAILROAD COMPANIES.

The City of Reading being the principal seat of the Mechanical Department of the Philadelphia and Reading Railroad, the establishments of that Company constitute an important feature of its manufacturing industries. These establishments involve a large investment of capital, and give employment to at least 2,800 of the inhabitants of the City, including skilled artisans and laborers.

THE ROLLING MILL of the Philadelphia and Reading Coal and Iron Company, in the northern suburb of Reading, on the line of the Philadelphia and Reading Railroad, built in 1868, comprises a plant of 22 furnaces and four trains of rollers, with requisite machinery for making splice bars and

fastenings. It employs 380 hands, and manufactures annually about 30,000 tons of finished iron and steel rails. Of the total product since 1868, 200,000 tons of rails have been absorbed by the Railroad Company and its connections.

The Mechanical Department of the Philadelphia and Reading Railroad Company, comprises the following works in the City of Reading :

MACHINE SHOP, at which the locomotives of the Company, are built or repaired, and at which the general machine work is done. This shop ranks among the most extensive of its kind in the United States.

CAR SHOPS, at which cars of all descriptions, of the Company, are built. This is one of the largest establishments of the kind in the United States.

In addition to these are the Blacksmith Shop ; Boiler Shop ; Tilt Hammer Shop ; Brass Foundry ; Iron Foundry, producing 10,000 tons of castings, annually ; Pattern Shop ; Paint Shop ; Wheel Gearing Shop ; Copper and Tinsmith Shops.

These shops as already stated, employ about 2,800 men, and the approximate amount of wages paid in the City of Reading in a single year, by the Company, aggregates the enormous sum of \$1,300,000.

RECAPITULATION OF MANUFACTURES.

The tenth census of the United States, 1880, presents the following statistical exhibit of the manufacturing industries of Berks County.

The County of Berks including the City of Reading, 877 establishments, capital, \$11,008,173 ; hands employed, males above 16 years, 7,977 ; females above 15 years, 867 ; children and youth, 808 ; wages paid during the year, \$2,962,025 ; value of materials, \$11,394,180 ; value of products, \$18,042,650. This statistical summary does not include breweries and distilleries, which are important industries ; gas, mixed textiles, petroleum, refining, print works, bleacheries and dye works, ship building and silk and silk goods. The statistics on these subjects have been submitted to special experts, and will be the subjects of detailed reports.

The proportion of the above aggregate of manufacturing industries belonging to the City of Reading is 301 establishments, capital, 3,861,256 ; hands employed, males over 16 years, 3,437 ; females over 15 years, 408 ; children and youth, 361 ; wages paid during the year, \$1,284,582 ; value of materials, \$4,245,176 ; value of product, \$7,237,914.

It should be mentioned that this does not include manufactures of iron bolts, nuts and washers ; iron forgings and iron and steel for the City, distinct from the County aggregates. The explanation of this is that the reports do not give the information in detail so as to distinguish the establishments in the City from those in the County.

THE TRUE POLICY OF INCREASED INDUSTRIAL ENERGY.

The vast extent and variety of the industries of the City of Reading have been noted, and to the economist and the capitalist, they establish beyond controversy, the importance of the City as a centre of manufactures.

The City of Reading presents another important inducement to capital and enterprise, in the fact that it is the centre of certain special manufactures, such as iron, machinery, iron nuts, bolts, washers and rivets, forgings, castings, cast and wrought iron pipes, hardware, stoves, wool hats, &c. Its reputation, therefore, as a mart for certain articles, attracts attention and invites orders. To suppose that a City is not benefited by the existence of a number of establishments in the same branch of industry, is as fallacious, as it is absurd.

The glass industries of Pittsburgh do not suffer because new enterprises are started by the side of older ones. The number and importance of these works invite the trade of the country to that point. When the trade wants glass, it knows of but one great centre, and that is Pittsburgh. Thither it goes to seek what it wants. The china manufactures of Trenton, the unrivalled britania and silver-plated ware of Meridan, and the same with other centres of certain manufactures, demonstrate that the number of such enterprises at a given point, is no detriment but stimulates and increases trade instead of destroying or paralyzing it. No one supposes that the wool hat industry of the City of Reading has been crippled because there are double the number of establishments there were twenty-five years ago. If hats can be manufactured better and cheaper at Reading, the demands of the trade will naturally seek its supply there. So with the hardware manufactories of the City, and any other branch of industry.

The policy of limiting or discouraging certain branches of industry, because other establishments of the same kind are in existence in the same City, is not only narrow and indefensible, but is behind the age. The City of Reading to-day, is one of the leading competitors in the United States, in certain classes of manufacture, and the greater the number of these establishments, the more certain are her enterprising capitalists and skilled artisans to command the attention and merit the demands of the trade.

WAGES.

The following general review of the comparative rates of wages in the State of Pennsylvania, has been compiled from the State reports issued by the Secretary of Internal Affairs for 1880. The report to Dec. 31, 1881, shows some reductions on these rates, those in Berks preserving the same relative position in amounts.

The wages of foundry men ranged in 1880, from \$5.48 daily, in Montour County, to \$1.17 per day in Chester County. The average wages paid this class of labor in Berks, was \$2.34.

The wages of metal carriers averaged from \$2.00 in Allegheny, down to \$1.00 in Cumberland County. The average in Berks County was \$1.30. The ordinary labor ranged from \$2.40 in Allegheny, down to 50 cents in Montour County. The same labor in Berks was \$1.21.

The prices paid per ton in rolling mills in Pennsylvania in 1880 ranged for puddlers from \$5.50 in Allegheny, Armstrong, Beaver, Lawrence and Mercer Counties, to \$3.50 and \$3.75 in Chester and Schuylkill. The rates paid in Berks were from \$3.50 to \$4.50.

The rollers in muck mills received per ton from 15 cents in Cumberland, to $68\frac{3}{4}$ cents in Allegheny. The rates in Berks County for this class of labor ranged from 17 cents to 28 cents per ton.

The daily wages in rolling mills ranged for foreman, from \$2.37 in Lehigh County, to \$5.00 in Montour. In Berks County they averaged \$2.89, and blacksmiths ranged from \$1.25 in Northampton, to \$2.50 in Lawrence. In Berks they receive \$1.79.

In iron Foundries the daily wages averaged for foreman, from \$1.10 in Dauphin County, to \$3.75 in Warren. In Berks County \$2.31. Iron moulders received \$1.89 in Berks; \$2.87 in Beaver;

\$1.25 in Union and Wyoming. The best machinists received \$1.69 in Berks; \$3.00 in Bradford; \$2.54 in Allegheny; \$1.25 in Dauphin.

In tanneries the daily earnings of tanners were \$3.00 in Clinton County; \$1.25 in Berks; \$1.15 in Elk; \$1.00 in Franklin, Lebanon, Mifflin and Montour. The laborers were paid \$1.25 in Bedford and Clearfield; \$1.00 in Berks, and 40 cents in Lebanon.

In miscellaneous industries the average earnings of employees, as shown by the operators reports to the Bureau of Industrial Statistics for 1880, were foreman \$1.62 in Lancaster and Lehigh; \$2.71 in Schuylkill; \$3.41 in Allegheny and \$5.00 in Berks, and averaged \$1.375 for the year.

Skilled workmen ranged in average earnings from \$1.34 in Somerset; \$1.77 in Schuylkill; \$1.99 in Berks; \$2.06 in Allegheny; \$2.75 in Huntingdon and \$3.00 in Lawrence.

Unskilled workmen ranged from 98 cents in Cumberland; \$1.05 in Northampton; \$1.09 in Berks; \$1.14 in Schuylkill and \$1.62 in Delaware.

Boys received 48 cents in Lycoming; 50 cents in Berks; 53 cents in Schuylkill and \$1.00 in Carbon.

In the manufacture of textile fabrics in Berks, skilled workmen in cotton and woolen earned daily, \$1.43 against from \$1.23 to \$2.50 in different sections of the State. In wool hats the earnings were \$1.32 in Berks, with no competition of earnings stated. The unskilled workmen in cotton and woolen, received \$1.15 against from 75 cents to \$1.27. The women earned 90 cents on cotton and woolens, and 67 cents on wool hats, against 90 cents to \$1.50 elsewhere. The boys under 16 years, receive 45 cents on cotton and woolen, and 57 cents on wool hats, against 44 cents to 85 cents on cotton and woolen, elsewhere. The girls under 15 years, earned 52 cents on cotton and woolen, and 32 cents on wool hats, and elsewhere, 38 cents to 77 cents on cotton and woolen.

It will be seen by this cursory review of the prices of labor, that in Berks, they ranged at a fair means between the maximum and minimum rates, a condition of things alike advantageous to capital and labor.

THE ADVANTAGES OF FOOD SUPPLY.

The vast wealth of the section contiguous to the City of Reading in minerals, is not the only advantage and inducement offered to corporations or individuals, as a place of manufacture. It is a rare occurrence in nature, that we find in the same locality a coincidence of resources favorable to the highest degree of mechanical, as well as agricultural development; yet such is indisputably the advantage enjoyed by the City of Reading. It is an axiom of introvertible applicability and force, in all the economic relations of man, that the soil is the source of all wealth. Without the products of the toil of the husbandman, civilization would be impossible, and civilization alone so enlarges the wants of man, that all the gifts of nature and genius are called into requisition to administer to them.

Apart from her vast stores of mineral wealth, the County of Berks would still take a high rank in the material resources of Pennsylvania. Under the careful system of husbandry imported from the fatherland, and which has been pursued by the yeomenry and tenantry of Berks for nearly two centuries, the soil has increased from year to year in its capability of production and is to-day, more able to support a large population of consumers engaged in the prosecution of mechanical industries, than it was a century and a half ago. It is an important point to consider that to whatever extent the manufacturing enterprise of Reading may be carried, food produced on the very borders of the City, or within a radius of cheap transportation, will always be available at low prices and in great abundance. With moderate taxation and cheap food, wages will naturally rate at a minimum, mechanical industries must thrive and the investment of capital receive a stimulus to enlarged activity.

Thus we find fertile fields yielding abundant harvests, mountain sides clad with towering forests, the earth a storehouse of mineral wealth and the whole contributing every thing essential to the sustenance and profitable occupation of man in agricultural, or mechanical industry. As an evidence of the agricultural wealth of this section, the census of 1880 shows that in the production of cereals, the County of Berks stood in the front rank.

This ratio of importance will hold out in every branch of material wealth. Therefore, enterprise in search of a suitable location for the investment of capital in mechanical industries, has but to investigate the superabundant resources and advantages of the City, to be convinced that every essential to success is either on the spot, or within easy and direct access.

THE ATTRACTIONS OF READING

AS A

PLACE OF RESIDENCE.

As the traveller leaves the City of Philadelphia by the Philadelphia and Reading Railroad, and follows the meanderings of the River Schuylkill, while passing between the borough of Pottstown and Douglassville, he enters the County of Berks. As he rushes swiftly along, the scenery develops into the grandeur of mountains and hills, and yet loses none of its attractiveness in the number and extent of well-tilled and fructiferous acres, peaceful hamlets and thriving villages. As he approaches the beautiful inland metropolis, Reading, the train speeds its way along a terrace in the mountain side with the bold and precipitous Neversink towering overhead, and the limpid current of the Schuylkill, placidly drifting sea-ward, below, while beyond spread out the voluptuous undulations of the bosom of nature, enriched by the toil and skill of successful and appreciative husbandry. A moment later he enters the portals of the mountain, with Reading itself resting in the distance beyond, in all the eloquence of its surroundings, as if set in a fretwork of forests and hills.

Let the traveler approach from the busy world of New York, as he reaches the railway and post village of Shamrock, he enters the charming and highly cultivated valleys of Eastern Berks; or approaching from the north, passing through the defiles of the Blue Mountains, after departing from Port Carbon, he leaves the sterile regions of the anthracite basins of the Schuylkill and strikes into the far spreading and swelling plane of Upper Berks; or approaching from the west, after passing the manufacturing hamlet of Sheridan, enters the luxuriant region of the

Heidelbergs, and for miles before him looking up the valley of Lebanon, he may behold the forest-clad elevation of Mount Penn, with Reading in sequestered beauty spreading out at its base. From what ever point of approach, whether by the iron highways, or the well gravelled roads, which enter the great amphitheatre of Berks, and converge at its metropolitan city, the same beauty of scenery and evidences of comfort and thrift, greet the eye.

READING PROPOSED AS THE SITE OF THE CAPITOL OF
THE UNITED STATES.

The attractions and desirable geographical location of the City of Reading gave it prominence in the list of sites presented for the establishment of the permanent seat of government of the United States. On August 25, 1789, during the first session of the first Congress, William Maclay, a Senator of the United States from Pennsylvania, presented the name of Reading, on the Schuylkill, as one of the places in Pennsylvania proposed for that purpose. The letters and other documents from the citizens gave the considerations which led to this offer, "representing their willingness to put themselves and fortunes under the exclusive legislation of Congress, and urging the salubrity of the climate, scenery, hospitality, facility of access, convenience of accommodations, abundance of provisions and other advantages." At this time Reading was a thriving Borough of 2,235 people, and in the County around had a population of 27,010 inhabitants.

In point of physical characteristics, such as commanding sites for the erection of stately public edifices, fertility of soil, for the production of food for a large population, excellent natural drainage, abundant flowing water, and a lime-stone and gravelly formation, all conducive to health and freedom from malarial poisons, a salubrious climate, and an environment of eternal hills, capable of impregnable defense against foes, foreign or domestic, and a steady, patriotic, enterprising and industrious people, it was far superior to the site afterwards selected.

After nearly a century of growth, Washington has few industries worthy of the name. Once it was pillaged and given to the flames by a foreign enemy, and later it required an army of

nearly a half a million men and powerful circumvallations, to save it from the incendiary torch of a domestic foe.

As we view the magnificent amphitheatre of Berks from the forest-clad summit of Mount Penn, seven hills, like the hills of eternal Rome, rise in graceful outline above the beautifully undulating plane. Imagine the most conspicuous of these, midway between the City and Village of Sinking Spring, surmounted by the mighty capitol, with its towering dome, its stately porticos, its massive approaches, its statued abutments and sculptured pediments. Imagine the executive residence, crowning the overhanging cliffs of the Schuylkill, with the crystal ripples of that picturesqued stream laden with health, gliding by. In fancy, picture the halls of the judiciary, and the imposing structures of the executive departments, rising from the crests of some elevated seat, and the intermediate spaces filled with the elegant residences of the lordly official or citizen of affluence, the humbler abode of the rank and file of the civil service, or the tradesmen, or citizens and mingling with these in their appropriate quarters, the establishments of mechanical industries. And with all this, the lavish expenditures which have been made to make Washington what it is to-day, by art, a beautiful city, Reading, as the capital of the Republic of the United States would be prouder than Rome in magnificence, rival Versailles and Paris in beauty, and compete with London in the extent of its industries and wealth. Within the periphery of the surrounding mountains would to-day, be found a population of a million human beings, not gathered by the centripetal force of government patronage, but primarily by the gravitating influences and interests of boundless physical resources and facilities for industrial development, and secondarily to meet the necessary demands of the government and its administrative departments, in their every day wants.

CLIMATE.

The climate of the region in which Reading is situated, is noted for its salubrity. The Schuylkill River, opposite the City is 192.52 feet above mid-tide in the Delaware River, or 195.86 feet above the ocean level; the Philadelphia and Reading Railroad crossing

at Penn Street, indicating the average elevation of the centre of the City is 265 feet above mid-tide in the Delaware River, at Philadelphia, or 269 feet above the sea; the Distributing Reservoir is 360.36 feet; Hawthorn, 410 feet; Edgemont, 550 feet and the White Spot, (Summit of Mount Penn), about 900 feet above the sea. It will be seen that apart from the ordinary climate experienced near the sea level, the City within its own borders, affords a range of meteorological conditions covering nine hundred feet of altitude. This in itself suggests the superior climatic advantages possessed by the City, as a sanitarium for the metropolitan City of Philadelphia and particularly for those in search of the invigorating influences of the mountains. The natural effects of pure air are also increased by the freshness of the forests of coniferous and deciduous trees, the presence of iron in mountains and the waters which spring from their cavernous recesses.

The observations of temperature at Reading published by the census office show the following results:

Reading, latitude $40^{\circ} 20' N.$; longitude $75^{\circ} 55' W.$; elevation above the sea, 269 feet; mean temperature, (degrees Fahrenheit), Spring 50° ; Summer 72° ; Autumn 53° ; Winter 31° ; average for the year 52° . This is the average for six years and eight months observations.

The following approximate meteorological data, given for the years 1880 and 1881, and for the months of January and July, sustain the high reputation of the climate of Reading;

Temperature, January, Mean,	1880, 41.0; 1881, 25.9.
Maximum,	1880, 63; 1881, 44.0.
Minimum,	1880, 19; 1881, 4.
July Mean,	1880, 75.6; 1881, 75.5.
Maximum,	1880, 95; 1881, 94.0.
Minimum,	1880, 60; 1881, 60.
Mean Relative Humidity, January,	1880, 75.0; 1881, 77.1.
July,	1880, 65.2; 1881, 66.8.
Precipitation, inches, January,	1880, 1.51; 1881, 3.66.
July,	1880, 7.74; 1881, 0.96.

The prevailing winds in 1881, in January, July, September, October, November and December, were from the west; in February,

north ; in March and April, northwest ; in May and June, east and in August, southwest.

THE STATISTICS OF MORTALITY.

The City of Reading ranks among the healthiest localities in the United States. The ratio of mortality, population, 43,280 per 1,000, during the year 1880, was 18.08, and for 1881 estimated population, 44,500, ratio 20.1.

A recapitulation of the most prominent diseases in each class, taken from the Report of the Board of Health for 1881, shows :

ZYMOTIC 285, including scarlet fever and its different types, 80 ; diphtheria, 14 ; typhoid and malarial fevers, 31. Under this head there were six fatal cases of small pox. This disease was brought hither by a tramp admitted to the Almshouse. Through the relentless efforts of the Board of Health, the contagion was restricted in its ravages and was promptly eradicated.

CONSTITUTIONAL 120, including consumption, 56. The mortality from this disease was 1874, 82 ; 1875, 105 ; 1876, 88 ; 1877, 91 ; 1878, 79 ; 1879, 109 and 1880, 84.

LOCAL 309, including pneumonia, 51 ; convulsions, 57 ; Heart, 33 and kidneys, 7.

DEVELOPMENTAL 152.

VIOLENCE 22, including accidents.

The totals of mortality by diseases in each class, reported by the Board of Health for the years named, were as follows :

	1881.	1880.	1878.	1876.	1874.
Zymotic -----	285	185	215	423	164
Constitutional ----	120	145	121	120	114
Local -----	309	296	247	313	334
Developmental ---	152	148	156	166	133
Violence -----	22	31	22	26	32
Miscellaneous ----	7	8	---	4	8
Totals -----	895	815	761	1052	722
Brought from a distance---	82	66	66	66	63

A COMPARISON OF THE HEALTH OF READING,

The National Board of Health, Washington, D. C., acting under the auspices of the government, in their report of mortality in upwards of two hundred cities and towns of the United States for the year 1881, shows that the City of Reading holds a high rank in point of health. During that year the annual death-rate per 1,000 of population, was 20.5. During the same year the highest rate was 31.9 in New York City, and the lowest, 11.5 at Utica, New York, which was an exceptional result. The average health-rate of the northern cities and towns named in 1881, was 23 deaths in 1,000, Reading being but 20.5. The cities of Pennsylvania named, are Philadelphia, 23 deaths in 1,000 of population; Pittsburgh, 28.6; Erie, 19.3; Reading, 20.5 and Scranton, 12.2; giving an average rate of 20.7 deaths. The cities and towns in the list, resorted to during the heated term, for reasons of sanitary attractions, showed the following: Nantucket, 26.8; Holyoke, 21.9; Somerville, 18.1; Chelsea, 20.4; Providence, R. I., 20.2; Yonkers, 20.0, and Newberg, N. Y., 20.0 and Orange, N. J., 20.8, in which list Reading holds an equally favorable position. This is the more favorable to Reading, as the healthfulness of the City naturally is in a measure disadvantageously affected by the casualties of its vast industrial establishments.

The principal manufacturing centres named, show Fall River Mass, 24.0; Lynn, 19.0 and Taunton, Mass., 20.0; New Haven, Conn., 20.4; New York, 31.9; Brooklyn, 25.2 and Buffalo, N. Y., 25.6; Philadelphia, 23.0; Pittsburgh, Penna., 28.6; Wilmington, Del., 31.0 and Washington, D. C., 24.8. It will be seen that Reading as a manufacturing City, and where the causes which lead to a high rate of mortality are consequently exceptional, is far below the average. Among the cities between 40,000 and 50,000 population, the rate of deaths per 1,000 of population was, Fall River, Mass., 49,000, 24.0; Camden, N. J., 41,658, 22.5; Scranton, Pa., 45,000, 12.2; Wilmington, 42,499, 31.0. With the exception of Scranton, Reading averages more favorably than cities of that rank.

In order to facilitate the treatment of diseases among the masses and particularly the large number of employees of the manufacturing establishments of the City, the Board of Directors of the Read-

ing Dispensary are now building a commodious brick hospital on a commanding site owned by the institution, opposite the Charles Evans' Cemetery.

THE CEMETERIES.

Among the other features of Reading are its beautiful resting places of the dead. The Charles Evan's Cemetery, the necropolis of the City, embracing a tract of about 120 acres overlooking the City, and a vast stretch of unrivalled landscape, with its magnificent sandstone entrance of the Elizabethan style, its embowered chapel and its sweeping fields of monumental art, is without exception, by nature and art, one of the most picturesqued and attractive places of sepulture in the United States.

THE WATER FOR DOMESTIC PURPOSES.

The quality of the water of a City is a consideration of vast importance, whether used for domestic or manufacturing purposes, and naturally enters largely into the health of a community. An analysis made by Drs. Stanley Smith and P. M. Ziegler, at the request of the Board of Health, shows that on a basis of a small quantity of free ammonia and less than 10 mg. albuminoid ammonia, to the million parts, being rated good and the rejection of water containing over 15 mg. albuminoid ammonia, the water of Reading is exceptionally pure.

The table submitted by these gentlemen at a time of drought and when there was a popular complaint, gives the following results of their analysis :

1880.	PARTS PER MILLION.	
	Free Ammonia.	Albuminoid Ammonia.
Mineral Spring Dam, Aug. 27.....	.01	.17
Ohlinger Dam, Aug. 29.....	.04	.16
Bernhart Dam, Aug. 26.....	.01	.08
Schuylkill, above City.....	.04	.07
Schuylkill, below City.....	.05	.10
City Water in City, Aug. 31.....	.01	.15
Ohlinger in City, Aug. 31 .....	.02	.13
City Reservoir, Fire, Aug. 26.....	.03	.16
Bernhart, Aug. 24.....	.01	.07

THE BEAUTY OF THE PLAN OF THE CITY.

In point of natural beauty of location and topographical diversity and attractions, the City of Reading has no rival in the United States. Like all the Cities founded by the great Penn himself, and by the hereditary proprietaries of Pennsylvania, the arrangement of the streets in the older portions is after the plan of Ancient Babylon. The main business street, Penn, beginning at the river and running east forms a broad and imposing thoroughfare, 80 feet wide from the banks of the Schuylkill to Fourth Street, 160 feet from Fourth to Sixth Streets, with a lozenge shaped space 200 feet wide at the point of intersection of Fifth, and from Sixth to the mountain base, 80 feet wide. The principal street for residences, Fifth, is also a beautiful thoroughfare, 80 feet wide, which crosses the City from north to south. The remaining streets are 60 feet, and pavements from 13 to 22 feet wide. The streets are well gravelled and the dip of the site from the foot of the mountain to the river, a distance of about a mile and a half, is 100 feet, which affords admirable facilities for natural drainage. The soil upon which the City stands is of a gravel and limestone formation, eminently conducive to freedom from the malarial exhalations, which afflict large and compact communities. The City is also well-built, the number of frame houses being very few. The material used, from the humblest dwelling to the ornate suburban mansion, being brick or stone. Of either of these materials there is an abundance. The stone taken from the crest of Mount Penn is particularly desirable in color and texture for building purposes.

THE COMFORT OF THE INHABITANTS.

The masses of the people engaged in mechanical and mercantile pursuits are also spared the degenerating influences physically and morally, of unwholesome and over crowded tenements. No City in the United States ranks higher than Reading in the housing of its working classes. In fact this large and influential element of the population, live in more comfort than the great bulk of the population of other cities. In 1870, the City of Reading, was one of the first five Cities of the United States in the number of dwellings to population. According to the census of 1880, the City main-

tained this position during the previous decade. In that year Reading possessed 8,267 dwellings, or an average of 5.23 persons to a dwelling. There were also 8,876 families with an average of 4.87 persons to a family.

The growth of the City in dwellings, has been maintained at a fair ratio with respect to population. The number of houses erected in any one year has aggregated as high as four hundred. During the year 1881, two hundred and forty-eight building permits were issued the larger portion of which were for two-story brick dwellings, usually occupied by the working classes.

Much more could be added upon this important subject which so much affects the character of any city. It is sufficient, however, to suggest these facts for the closest scrutiny of persons who may visit Reading with a view to selecting a place of residence.

THE SUBURBAN BEAUTY OF READING.

The chief attraction of Reading, next to the comfort and other satisfactory environments of its inhabitants, is the beauty of its suburban districts. The sites for homes inspired by a love of the beautiful in nature, are there in endless numbers and variety. They are on the mountain sides, where the circumambient atmosphere breathes nothing but health and invigoration, or look out upon scenes more lovely than the brightest fancy of the painters brush. They are in the shaded nook, in some sequestered vale, or on the swelling plane, by the mountain brook, in the grove of chestnut and oak, or amid the sighing pines. For those who seek health and recreation, a life of sunshine and elegant ease, a refuge from the poisonous atmosphere of the great cities during the heated term, or the attractions and opportunities of a home of refining influences, both in natural beauty and social surroundings, no place, it may safely be said, can be found anywhere on this broad and beautiful continent, to surpass the City of Reading.

THE SURROUNDING COUNTRY.

In addition to these attractive spots within the City limits, the neighboring hills also afford equally as beautiful sites for homes

for permanent or summer residence, and embracing every variety of inland landscape, hill, valley and river. The main highways and byways, which diverge from the City, are often quite equal to the finest park drives and reach every spot desirable for residences. The mountains abound in perennial springs and are clad in groves of oak, chestnut and pine, ready grown to contribute to the beauty of a rural home. Many localities also have some incident of history or romance associated with them. The "Hessian Camp," within the City limits still keeps fresh in the mind the glorious victories of Trenton and Monmouth, which so raised the despairing hopes of the patriots of 1776-81. It was here that the captured mercenaries were sent for safe-keeping. The "Mineral" Spring in a sequestered vale, on the the eastern borders of the City, a favorite resort of the people, of a summer's evening, recalls old-time political conferences which affected the interests of parties. The "Lover's Leap," revives the romantic love of an Indian maiden. The Hiener's Wesel and Klappertal, with their fountains of crystal water, speak of the domestic life of the aboriginal people who once pursued the chase over the valleys and hills of what is now Berks. The "Flying Hill," Poplar Neck, Neversink and the Valley of the Tulpehocken, which takes the mind back to the earliest settlement west of the Schuylkill, all bring up pleasant thoughts and memories.

In fact the entire country within the range of the South and Blue Mountains, visible from the City, is like one vast park, with lawns, drives and streams. The careful husbandry of this section has given the farmers of Berks a high reputation, and the people of the City in their evening drives for recreation, have the refining influences of such beautiful surroundings. The numerous picturesque inns on the roadside are also places of pleasant resort on the way.

SCHEMES OF SUBURBAN IMPROVEMENT.

With a view to the extension of the City, several schemes are in existence, the most important of which is that known as the *Reading Land and Improvement Company*, an incorporated body, for the

purchase of large tracts of land to be divided up and disposed of at a fair valuation for manufacturing sites and building lots for the masses. This Company has a paid up capital of \$130,000, and owns about 250 acres of land, fronting on the western bank of the Schuylkill River, also lots in the City of Reading, and a frontage of 3,000 feet on the Wilmington and Northern Railroad and the eastern bank of the Schuylkill.

This Company also owns the charter of the *Angelica Water Company*, the object of which is to utilize the Angelica Creek, by the conveyance of its waters to any point not exceeding 190 feet above the level of the River Schuylkill.

This stream furnishes in average seasons, according to Mr. Hogan's report elsewhere referred to, a flow equal to two-and-a-half million gallons of soft water of excellent quality in every 24 hours, which could be increased, it is claimed by the Company, to ten million gallons by storage at a point 4 miles distant from the present distributing reservoirs of the City. At this point, an elevation is claimed that would supply by gravitation not less than three million gallons daily.

THE FACILITIES OF ACCESS TO AND FROM OTHER CITIES.

The residents of Reading enjoy exceptional advantages of reaching points near or remote, by railway. The iron highways radiating from the City in all directions, have a system of connections with all the great lines throughout the United States. By the schedules of the Philadelphia and Reading Railroad, it will be seen that no less than seventy passenger trains arrive at and depart from the commodious and beautiful Union Passenger Station of that Company, at Reading, daily, the time by fast train to New York being four hours, to Philadelphia or Harrisburg, two hours; to Allentown, one hour, and to the picturesque regions of the anthracite coal fields, two hours. At these points the Reading Road intersects the systems of the Pennsylvania, New York Central, Lehigh Valley and New Jersey Central Railroads, with which trains make close connections, and thence passengers may reach any part of New England, the West and South. The passenger traffic of all the Reading lines for 1881, approximated 10,000,000 human beings.

Of this almost incomprehensible mass of moving humanity, Reading the most important inland City on the line, contributed an important share. It should also be said, in all its service to the public since 1834, there never was a passenger killed who was in his seat. This road also carries more passengers per mile than any other road in the world.

The Philadelphia and Reading Company also exhibits exceptional liberality towards the residents of Reading, in the matter of special rates. In addition to the regular transient fare of about 3 cents per mile, the Company issues books good for 1,000 miles over any of the Company's lines, good until used, at 2.4 cents per mile. Also excursion tickets good for the same day, or good for any train on Saturday, going and any train on Monday, returning, at about $2.17\frac{1}{2}$ cents per mile. During the summer, frequent special excursions are run from points on the road, the rates from Reading to Philadelphia being placed as low as \$1.75 for the round trip, good for the same day. The City of Reading is also in relations with outside lines for the issue of general excursion tickets to summer excursionists, good for the usual period of this popular method of summer recreation. Therefore taking the question of facilities and cost of travel into consideration, no City in the United States enjoys superior advantages.

THE TELEGRAPH AND EXPRESS FACILITIES.

In connection with these facilities of travel, may also be mentioned the extensive arrangements for telegraphic communication with all points in the United States, at minimum rates. The Express system is also conducted on the most liberal scale in the matter of facilities and rates.

THE PUBLIC AND PRIVATE BUILDINGS OF THE CITY.

The City in public and private buildings, is in advance of any inland City of Eastern Pennsylvania. The *Court House*, designed by T. U. Walters, afterwards architect of the magnificent wings of the Capitol of the United States at Washington, is a commodious structure of Ionic order, erected in 1838-40, consisting of a portico of red sand-stone, and a cupola 146 feet

high. The *County Jail*, at the foot of Mount Penn, is a massive castellated structure of red sand-stone. The *City Hall* is a spacious building in which are the City offices. The *Churches*; *Academy of Music*; *Opera House*; *Market Houses*; *School Houses* and *Engine Houses*, are all fine edifices. The *City Park*, granted to the County by the Penns, as a common, is beautifully laid out and planted. The *Agricultural Fair Grounds* are also spacious and attractively located. About two miles from the City are the *County Almshouse and Hospital*, fine structures and surrounded by an estate of about 500 acres, once the property of Gen. Mifflin, of Revolutionary fame. There are three fine *Bridges*, one of iron about 400 feet long, across the Schuylkill, connecting the City with the western bank. The *Philadelphia and Reading Railroad Bridge*, with its towering arches of masonry and brick and symmetrical iron truss swinging from pier to pier, is a fine specimen of bridge architecture.

The number of private residences of fine architectural display is also large. The stranger visiting North or South Fifth Street, Perkiomen Avenue, Centre Avenue, the Mineral Spring and Hill Roads, will be impressed by the stately grandeur and taste of the domicils of the affluent classes.

THE MUNICIPAL GOVERNMENT.

As has already been stated, Reading is the shire City of Berks, and as such, is the seat of the courts of judicature, and the offices of the Sheriff and other administrative authorities. The City Government, the information respecting which has been furnished by John Keppleman, City Clerk, is organized on the most complete plan of municipal administration. The executive branch embrace the Mayor, City Comptroller, Treasurer, City Clerk, Aldermen, Constables, Water Commissioners, City Engineer, Solicitor, Commissioners of Highways and Paving, Commissioner of Market and City Property, Board of Health, and a well organized Police, and the Legislative, a Select and Common Councils, consisting respectively of 11 and 42 members, and presided over by a President and Clerk of their own selection. The City for the purpose of elections and administration is divided into eleven wards.

It also constitutes a School District, governed by a Board composed of a President, Secretary, Treasurer and Controllers, of the latter, each ward having a proportionate representation. There are also a City Superintendent and 142 Schools, viz.: 1 High; 16 Grammar; 42 Secondary, 23 male and 19 female; 40 Principal and 43 Assistant Primary Schools. The City for school purposes is divided into six sections.

THE HEALTH, POLICE AND FIRE DEPARTMENTS.

The Sanitary, Police and Fire Departments compare in every respect with any City of equal population in the United States. The Board of Health, is composed of gentlemen of the highest attainments in sanitary and medical science, and with the co-operation of the City Government are able to care properly for this important department. The order of the City, in addition to the constabulary force, which is more particularly an appanage of the City Judiciary in serving the notices of the courts, or petty tribunals of aldermen, is preserved by a well organized, well drilled and thoroughly equipped police force, commanded by a chief and two sergeants. These are more properly speaking, the conservators of the peace.

The Fire Department is also a branch of the municipal government of which Reading may well be proud. The City is divided into two fire districts under the general control of a Chief Engineer, aided by two assistants. The system embraces volunteer service, but each company receives an annual municipal subsidy for repairs, &c. The buildings have also been in part or wholly paid for by the City. The apparatus comprises 7 steam fire engines of the highest power and beauty of finish; 1 hose company; 1 hook and ladder company and salvage corps and 1 hose, hook and ladder company, the whole having an aggregate force of 2,500 active and 1,300 honorary members.

The system of telegraphic fire alarms is also in operation throughout the City, there being 31 alarm stations connecting with the Fire and Police Headquarters. A lofty alarm tower, on the Rainbow Steam Fire Engine Company's Station, commands a view of the entire business portion of the City, and contains the main

alarm bell. In order to facilitate the operations of the fire companies, the great industrial establishments have adopted a plan by which their men are permitted to leave their work for fire service. The supply of water is also abundant.

The City is illuminated by gas in the thickly settled, and naphtha lamps in the suburban portions. The price of gas for private consumers is also scheduled at reasonable figures and the illuminating quality is exceptionally fine. About the premises of the larger iron manufacturing establishments, the electric light has been introduced by private enterprise, with great success.

CHURCHES.

The City is also well supplied with churches representing almost every religious denomination. The strongest sects in point of numbers are the Lutheran and Reformed, the church of the ancestors of the great bulk of the early settlers of the County. The Trinity Lutheran Society instituted in 1752, and First Reformed in 1751, are still in existence.

The church structures also afford ample accommodations for the large population of church goers, and many are beautiful specimens of ecclesiastical architecture.

The Episcopal Cathedral, the Lutheran, Reformed, Presbyterian and Roman Catholic Churches, will compare with those of any other City of equal size in the United States. The Episcopal Cathedral has a massive front and spire of red sand-stone, patterned after the English Gothic style. The German Lutheran Church, erected in 1791, will seat 1,500 people, and has a spire 201 feet high. The St. Paul's Memorial Church is a beautiful sand-stone edifice. The First Presbyterian, St. Paul's German Catholic and Ebenezer Methodist Episcopal Churches are also fine structures.

The number of church edifices of each denomination, is reported as follows: Lutheran, instituted in 1752, seven; Reformed, instituted in 1751, four; Methodist Episcopal, instituted in 1828, four; Protestant Episcopal, instituted 1765, four; Presbyterian, instituted 1812, three; Roman Catholic, instituted in 1791, two; Baptist, instituted in 1825, two; United Brethren, established in 1847, two; Society of Friends, established in 1750, two; Univer-

salist, established in 1830, one, and the Evangelical Association, five.

COMMON SCHOOLS AND OTHER EDUCATIONAL FACILITIES.

The following tabulated statement taken from the annual report of the State Superintendent, will show the educational facilities enjoyed by the people of Reading, under the common school system, and a comparative exhibit of the same in the adjacent County of Berks, for the school year ending June 7, 1880. In the City of Reading, the whole number of schools was 142, and in the County 573. The average number of months taught, Reading, 10 ; County, 6.49 ; teachers, Reading, males, 3 ; females, 139 ; County, males, 377 ; females, 201 ; Scholars, Reading, males, 3,680 ; females, 3,794 ; average number attending school, 5,277 ; County, males, 14,566 ; females, 12,730 ; average number attending school, 18,958. Tax and rate per cent, Reading, 1880, number of mills levied for school purposes, 2.50 ; the same for building purposes, 1.50 ; total \$75,081 ; the County respectively, as above, 1.73, 1.08 ; \$152,873 ; receipts, Reading, from State appropriations (\$10,354) ; taxes and all other sources, \$123,059 ; in the County, State, (\$25,868) ; taxes, &c., total \$234,848 ; expenditures, Reading, for school houses, purchasing buildings, renting, teachers wages, fuel and all other expenses, \$90,453 ; County, respectively as above, \$189,255.

In addition to the public schools, there are many other educational institutions for the convenience of those who prefer a special course of training for their children. Among these are the Diocesan Day and Boarding School, under the patronage of the Bishop of the Episcopal Diocese of Central Pennsylvania, St. John's Parochial School, German and English, under the auspices of the St. John's German Lutheran Church ; St. Peter's Academy of the Immaculate Heart and St. Paul's Parochial School, Roman Catholic Institutions, and several excellent private Academies and Schools.

There has been a wide spread disposition on the part of many people to depreciate the interest of the people of Reading and Berks in the cause of education.

Among the German Protestant settlers of Berks County, the church and the school were the foremost interest. The ancient

chronicles show that with every large body of emigrants, there was a preacher and a "school meister." The latter frequently had also license to perform certain functions of the clerical office. In 1709, school teachers are mentioned with the large body of Germans who passed through London on their way to America. In 1731, George Steifel, and prior to 1735, a tailor named Casper Leutbecker, are mentioned as teaching school in Tulpehocken Township, under the auspices respectively of the German Reformed and Lutheran Churches. The Society of Friends also had good schools in Maiden creek, with free tuition for the poor of the Society. The Roman Catholics, Mennonites, Schwenkfelders and Moravians had their schools prior to 1741. From 1752, the year of the organization of the County of Berks, down to 1834, when the law establishing free schools began to be enforced, the parochial school was common in all parts of the County, and education was promoted through them. There were also pay schools in every district. From these sprang many schools still in existence under the common school system. The Reverend Michael Schlatter, of St. Gaul, Switzerland, might be mentioned as an ardent worker in the cause of charity schools, as early as 1746.

The Reading Academy was chartered in 1778, and continued in existence until 1836, when it expired, but was revived in 1840.

The intelligent and progressive Germans of Berks, were always foremost in the cause of education, Gov. Schultz, a native of Tulpehocken Township, Berks County, was an advocate of the free school system for the State, as early as 1827, and Gov. Ritner, also of Berks County, contributed largely to the permanent establishment of the system created under the law of 1834, which was signed by Gov. Wolfe, also a Pennsylvania German. The opposition of the German masses of the County of Berks to free schools, it is claimed, was not in opposition to education, but in defense of the cause of religion, they regarding the church and the school, as mutually dependant upon each other. It took thirty-three years, however, to wholly overcome this popular belief. The Township of Caernarvon, settled by Welsh, in 1834, the year of the passage of the bill, was the first to accept free schools and District Township, settled by Germans, was in 1867, the last to acquiesce.

In 1854, William A. Good, the first superintendant, a native of Philadelphia, but at the age of two years, with his parents, a resident of Rehrersburg in Tulpehocken Township, and educated in Reading, organized the system, and was the pioneer of common school education in the County of Berks.

The Keystone State Normal School at Kutztown, near Reading, for the Counties of Berks, Lebanon and Schuylkill, founded in 1865, has an average attendance of 500 students who are there fitted to be instructors.

THE BANKING FACILITIES OF THE CITY.

To accommodate the large and growing industrial and mercantile interests of the City and County, there are five Banks, organized under the National Banking System. The facilities afforded are commensurate with the necessities of the community and the surrounding country.

The following is an abstract of reports made to the Comptroller of the Currency, showing the aggregate condition of the National Banks in the City of Reading, Pennsylvania, at the close of business on Saturday, the 31st day of December, 1881.

RESOURCES.		LIABILITIES.	
Loans and Discounts.....	\$2,617,082 83	Capital Stock paid in.....	\$1,040,020 00
Overdrafts.....	3,339 37	Surplus Fund.....	215,571 63
U. S. Bonds to secure circulation..	1,020,000 00	Other undivided Profits.....	193,296 76
U. S. Bonds to secure deposits.....	50,000 00	National Bank Notes	
U. S. Bonds on hand.....	253,700 00	issued.....	\$918,000 00
Other Stocks, bonds & mortgages..	5,206 00	Amount on hand.....	10 00
Due from approved reserve agents	261,342 40	Amount outstndng.....	917,990 00
Due from other National Banks...	161,328 44	State Bank Notes outstanding.....	
Due from State Banks & Bankers..	24,641 46	Dividends unpaid.....	22,783 45
Real estate, furniture & fixtures..	136,735 57	Individual Deposits.....	2,707,743 30
Current expenses and taxes paid..	13,591 60	United States Deposits.....	40,852 30
Premiums paid.....	4,102 33	Deposits of U. S. Disbursing Offi-	
Checks and other cash items.....	79,271 82	cers... ..	1,963 50
Exchanges for clearing house.....		Due to other National Banks.....	141,783 85
Bills of other National Banks.....	87,755 00	Due to State Banks and Bankers..	2,916 36
Fractional Currency.....	1,867 81	Notes and Bills re-discounted.....	
Specie, viz :		Bills Payable.....	
Gold Coin.....	\$291,106 50		
Gold Treasury Cert's..			
Gold C. H. Cert's.....			
Silver Coin.....	45,283 60		
Silver Treasury Cert's	1,330 00		
	337,720 10		
Legal Tender Notes.....	173,358 00		
U. S. Cert's of Dep. for Legal Ten-			
der Notes.....			
Five per cent. Redemption Fund.	45,900 00		
Due from U. S. Treasurer.....	7,978 42		
	\$5,284,921 15		\$5,284,921 15

(For details of condition of each bank, see Report of the Committee on Statistics, on Banks.)

SOCIETIES AND ASSOCIATIONS.

There are many secret, eleemosynary, trade, literary, scientific, social, religious, agricultural and musical organizations in the City, with a large and important membership. The masonic, established in 1794, and Odd Fellows Fraternities, are particularly strong and the lodges are maintained in the most thorough manner.

The Berks County Agricultural and Horticultural Society, is one of the oldest organizations of the kind in the State of Pennsylvania. The Society grounds at the foot of Mount Penn, are spacious and well arranged, with a half mile race-course. The annual fairs are well stocked with the products of the field, the hearth, the orchard, the vineyard, the dairy and the stable, and the attendance has numbered as high as ten thousand persons in a single day. The Berks County Poultry and Pet Stock Association is also a flourishing society, and one which has done much towards the improvement of the feathered and smaller animals.

There are also numerous Building, Loan and Savings Associations, and it is to these successfully managed institutions, that the City is largely indebted for the number of attractive and comfortable dwellings, owned and occupied by the working classes. (See Report of the Committee on Statistics, giving an exhaustive exhibit of the condition of the Building, Loan and Savings Associations in the City of Reading, December 31st, 1881.

Among the many other associations for the promotion of charity, good order and intellectual development, may be mentioned the Home for Widows and Single Women, the Young Men's Christian Association, the Pathological Society of Berks County, the Washington Library, the College of Physicians and Surgeons of Reading, the Medical Society of the County of Berks, the Reading Medical Association, the Society of Natural Science, the Institute of Physical Culture, the Reading Dispensary, the Reading Relief Society, the Legal Association of Berks County and the Dramatic Association.

In addition to these there are two Posts of the Grand Army of the Republic, and numerous Literary and Beneficial Associations, which indicate the disposition of a share of the people to promote intellectual culture and to contribute to the alleviation of the miseries of the less favored portion of the population.

ART AND MUSIC.

The City of Reading has always been a centre of Science, Art and Music. The habits of application and study among the educated classes, have resulted in producing many examples of success in these branches. The Societies of Natural and Medical Science, rank favorably with similar institutions throughout the country, and among Reading's journeymen may be found an entomologist without a rival in the world in his branch of science, and the owner of one of the three greatest collections of lepidoptera extant, and a minerologist, who without the opportunities of collegiate training, ranks as one of the leading authorities of the Commonwealth. The City also furnished to science such men as Spencer F. Baird, of the Smithsonian Institution. Among the people may be found other instances of unapplauded, but sterling worth, which but demonstrates the material of the masses.

In the line of painting and sculpture, it is but necessary to mention the names of Benade, Devlin, Schœner, Behne, Shearer, Spang and Strecker, all well known in the world of art.

In music, the Reading Choral and Philharmonic Societies, Harmonie Maennerchor, Germania Orchestra, Ringgold Cornet, and Alpha Fife and Drum Bands, rank with the finest organizations of the kind in any City.

PLACES OF AMUSEMENT.

There is no City in inland Pennsylvania, better provided with accommodations for first-class operatic, theatrical and concert entertainments than Reading, and no community gives to the opera and drama more generous and appreciative encouragement and support.

On October 1, 1872, Mishler's Academy of Music was dedicated with appropriate ceremonies. This was the first venture to erect an establishment fully equipped to meet all the requirements of a

dramatic performance. This enterprise was inaugurated and carried out by that public spirited citizen, Joseph Mishler. The Academy of Music, which bears his name, is a place of amusement commensurate with the rank and taste, intelligence and appreciation of the people of Reading. The interior is arranged with all the elaborate detail of a first-class theatre in the large Cities, and will seat 1,200 persons. The scenery and stage appliances are complete in every particular, and the decorations of the walls and ceilings show the good taste of the founder of this temple to the Thespian Art. The character of this place of amusement has been fully maintained by John D. Mishler, and during the season through his enterprise, an opportunity is afforded the citizens of Reading to indulge their taste for amusements of the highest character. During the season of 1880-81, the Academy of Music was open for one hundred and six performances.

The liberal patronage bestowed upon the Academy of Music encouraged the erection in 1874, of the Grand Opera House by a Stock Company. This is an imposing structure, tastefully and richly finished within, and will seat about 1,000 persons. The scenery was painted by Russel Smith, and is very fine.

With the facilities afforded by the Academy of Music and the Grand Opera House, Reading now enjoys the finest companies and stars of the country.

There are also halls throughout the City, which are used for the meetings of the numerous societies, which assemble at stated intervals.

NEWSPAPERS.

The newspaper press in English and German, is liberally represented. The Reading Adler, (weekly), (Democratic), established Jan. 17, 1796, by Jacob Snyder & Co., is the oldest German newspaper in the United States. The Berks and Schuylkill Journal, weekly, (Republican), was established June 17, 1816, by John S. Richards. The Eagle, (Democratic); News, (Democratic); Der Pilger, German; Republicaner von Berks, German; and Biene, German, represent the weekly press, and the Times and Dispatch, (Republican), and Herald, (Independent), and Post, (German),

represent the morning press, and the Eagle, (Independent), and the News, (Democratic), the evening press.

The first newspaper established in the town, was the "*Neue Unpartheyische Zeitung*," (Neutral Times), 1789.

THE CITY PASSENGER RAILWAYS AND COACHES.

For the convenience of travel, two lines of Street Railways traverse the City from east to west, and north to south, intersecting each other on the main central square. Both lines are equipped with the latest patterns of cars and run at short intervals on schedule time.

A line of coaches also runs regularly across the City, from north to south on the line of Ninth Street.

THE MARKETS.

The Markets of Reading are exceedingly fine. The fertile country contiguous to the City, furnishes every variety of field and garden product, adapted to the climate and latitude. The Market Houses, six in number, are spacious brick structures fitted up with every convenience. Markets are held twice a week.

THE GENERAL BUSINESS ACTIVITY OF THE CITY.

In the City every branch of mercantile enterprise, and of domestic arts is well represented, which enables residents to avail themselves, at home, at reasonable prices of every requisite to the comfort, convenience and enjoyment of life. The principal stores in every line of business will rank in all respects with the finest of any inland City in the Commonwealth, and the skilled mechanics of the city are without a rival for intelligent and artistic workmanship.

The demands of the community and the populous country in the immediate vicinity, which draws upon the city for supplies in every department of daily life, has afforded a sufficient stimulus to merchants to keep constantly on hand a large variety of first quality goods. A few persons taking advantage of the favorable rates offered in the way of excursion tickets, also avail themselves of the opportunity to make certain classes of purchases in Philadelphia

and New York. As a rule, however, the home mercantile houses furnish articles of as good quality and fair price, as in the Cities named. The luxuries and necessities of life can also be had at minimum rates, which makes the cost of living in Reading less than for the corresponding class elsewhere.

CONCLUSION.

In fact there are few inland cities in the United States where the people enjoy so many comforts at so small a cost. With a surrounding country unrivalled in picturesque landscape, a City beautifully situated, regularly laid out and well-built, an intelligent and industrious people, fine churches, excellent educational facilities, a judicious municipal administration, low taxes and cheap living, Reading offers to those in search of a place of residence, attractions opportunities and advantages unexcelled by any City of its size in the Commonwealth of Pennsylvania, and it might be safe to say in the United States.



TREASURER'S REPORT.

READING, PA., January 1, 1882.

To J. H. STERNBERGH, ESQ.,

President of the Board of Trade of the City of Reading.

SIR :—I herewith hand you my report for the year ending December 31st, 1881, as follows :

DR.

December 31, 1881. To membership fees received during the year, per hands of Secretary.....	\$900 00
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CR.

By amount paid for Maps for First Annual Report.....	\$273 00
By amount paid for Printing and Advertising	107 08
By amount paid Secretary's Salary.....	68 75

Total disbursements.	\$448 83

Balance on hand this date.....	\$451 17

Respectfully Submitted,

JOHN R. KAUCHER,

Treasurer.

REPORT OF COMMITTEE ON MANUFACTURES.

To the President and Directors of the Board of Trade:

GENTLEMEN:—Your Committee on Manufactures respectfully report as follows: We find that the City of Reading is admirably located for manufacturing purposes, as it possesses advantages enjoyed by very few cities in the country. It is situated within close proximity to the great Anthracite Coal Fields and has an abundant supply of pure soft water, with railroad communications direct to all points, and is surrounded by a region producing iron ores, from which pig iron of the finest quality can be manufactured. It has an industrious and provident population, and is in the centre of one of the finest agricultural counties of the State.

The natural advantages of the City cannot fail to make it one of the largest and most enterprising of inland cities, particularly should the municipal authorities be governed by a liberal policy towards the manufacturers interests, especially by granting water for manufacturing purposes at nominal expense and larger taxes at minimum rates, consistent with the demand of necessary and prudent expenditures.

The manufacturing interests of Reading are quite deversified. The extent, variety and value of these will be found embraced in Table No. 1. Report of the Committee on Statistics and generally in the Description of Reading, pages 69 to 96.

The productions of our manufactories find a market in every part of the United States, and are largely shipped to foreign countries.

There are numerous branches of industry not represented in our City, which could no doubt be carried on with profit; such as bridge building, manufacture of steel, reapers and mowers, plows and other agricultural implements, sheet brass, silk goods, carpets, clocks and watches, carriage spindles, glass, malleable iron goods, tubes, buckets, &c. Your committee suggests this, in the hope of attracting the attention of some of our people or strangers, to the fact, that this City affords facilities for any kind of manufacturing industries, and to induce parties to look closely into this question.

Desirable sites are numerous, both in and around the City, no better can be obtained anywhere than along the Philadelphia and Reading Railroad, in the northern part of the City, and along the Lebanon Valley and Schuylkill and Lehigh Railroads, and on the property of the Reading Land and Improvement Company, on the west side of the Schuylkill. The unoccupied ground suitable for manufacturing purposes can be seen by reference to the map.

The report of the Committee on Transportation convinces us that the Philadelphia and Reading Railroad Company intends in the future to extend to the manufacturers of Reading such a policy as will enable them to compete with any other City in the United States, no matter where situated. This will be a great service in placing Reading in the position to which it is entitled by its geographical location and natural advantages in point of resources and facilities of transportation.

In this connection we desire to submit the following average cost of raw materials named.

Table showing the present cost of articles used in the various manufacturing and building industries of the City :

Anthracite Coal—Lump and St. Bt. at Reading,	\$3.40 per ton of 2,240 lbs.
Egg and Stove	3.50 " " "
Nut	3.25 " " "
Pea	2.20 " " "
Bituminous Coal—	3.46 per ton of 2,000 lbs.
Iron Ore—Red Hematite, average	3.50 per ton of 2,240 lbs.
Cornwall Red Short	4.40 " " "
Magnetic Jersey, average	5.00 " " "
Limestone—	75 Cts to 1.00 per ton of 2,000 lbs.
Fire Brick—Delivered on car at works,	35.00 per thousand.
Common Brick—At kiln, including 10 per cent.	
of pressed,	5.00 per thousand.
Hemlock Lumber, different lengths,	\$14.00 to 16.00 " "
Pine Lumber, different lengths,	22.00 to 26.00 " "
Building Stone delivered, average	75 Cts. to 1.00 per perch.

JESSE ORR, *Chairman*,
T. A. WILLSON,
W. H. REINOEHL,
MATTHAN HARBSTER,
WM. M. KAUFFMAN,
ISAAC MCHOSE,
CHARLES RICK.

REPORT OF COMMITTEE ON ARBITRATION.

To the President and Directors of the Board of Trade :

GENTLEMEN :—Your Committee on Arbitration respectfully beg leave to report as follows :—That their services since the appointment of said Committee over one year ago, have not been called into requisition, and this they consider the most gratifying and encouraging fact to report, since it clearly demonstrates the prosperous and satisfactory condition of trade in this city. Strikes and disturbances are unknown in our midst. Fair wages are paid by employers, and a fair equivalent in work is cheerfully given in return by employees. Our people believe that capital and labor should go hand in hand and the result of this wise conclusion necessarily brings success and prosperity to both parties. It therefore gives your Committee great pleasure to report so gratifying an out-look for our rapidly growing and flourishing city. And we beg to invite the attention of capitalists to these facts.

Very Respectfully,

CHARLES BRENEISER, *Chairman.*

NICHOLAS JONES,

JOHN B. BROOKE,

A. K. STAUFFER,

THOS. P. MERRITT.

REPORT OF COMMITTEE ON TRANSPORTATION.

To the President and Directors of the Board of Trade:

GENTLEMEN :—Few cities in the United States surpass Reading in the facilities for the transportation of all classes of raw materials and manufactured articles. The importance of the City as a railroad centre, the vast extent of its connection with transporting lines and the favorable rates of through freights, will be found fully considered in the Description of Reading, pages 32 to 47.

The fact that 70 passenger trains, 82 freight trains and approximately 96 coal trains arrive and depart from Reading daily, except Sundays, in itself indicates the advantages enjoyed by manufacturers and merchants for the receipt and shipment of every character of merchandise and other material, besides affording the traveling public every facility for reaching all points in the United States. The Committee on Transportation after several conferences with the management of the Philadelphia and Reading Railroad Company take great pleasure in mentioning that an understanding has been reached which is extremely favorable to the shipping interests of the City, and to the development of its manufacturing industries.

The report of the Committee on Statistics (Table No. 2, Traffic Statement,) will show the extent of the inward and outward traffic of the City.

FRED'K LAUER, *Chairman*,
A. WILHELM,
WM. R. MCILVAIN,
DeB. RANDOLPH KEIM,
JACOB KNABB.

REPORT OF COMMITTEE ON STATISTICS.

To the President and Directors of the Board of Trade:

GENTLEMEN :—Your Committee beg leave to herewith submit their report for the year 1881. The following tables fully set forth the activity that prevailed in all our industrial establishments during the year, the soundness of our financial institutions and the rapid growth and prosperous condition of our City.

H. EPPHIMER,

J. F. MOERS,

J. V. KENDALL,

JAS. L. DOUGLAS.

TABLE No. I.

Showing Class of Manufactures, Number of Establishments, Amount of Capital Invested, including Real Estate, Number of Hands Employed in each Branch, Amount Paid to Employees, together with the Value of Manufactured Products in the City of Reading during the year ending December 31st, 1881.

INDUSTRIES.	No. of Establishments.	Capital Invested, including Real Estate.	No. of Hands Employed.	Amount of Wages Paid during 1881.	Value of Product.
Agricultural Implements.....	2	\$13,000	9	\$3,000	\$14,000
Bags, Paper.....	2	2,400	7	1,100	6,000
Baskets, Rattan and Willow Ware.....	4	580	8	1,190	5,150
Beer, Porter, Ale and Brown Stout. 58,537 Barrels.....	5	332,000	82	48,800	468,300
Blacksmithing	9	13,000	18	8,930	22,800
Boat Building, Canal and Steam Pleasure.....	2	4,600	14	2,000	10,000
Book Binding.....	3	3,100	13	2,900	9,500
Boots and Shoes, including Uppers.....	25	44,200	161	77,000	145,000
Boxes, Cigar.....	5	30,000	28	16,500	66,000
Boxes, Fancy and Paper.....	2	9,500	25	6,500	15,000
Bread, Crackers and other Bakery Products.....	30	41,800	99	26,137	147,280
Brick and Tile. 12,221,000.....	15	24,000	205	39,800	67,750
Brick, Fire.....	2	130,000	90	21,137	151,500
Brooms and Brushes.....	13	19,250	50	12,476	55,000
Carpentering.....	20	82,300	188	35,617	147,954
Carpets, Rags.....	8	6,300	44	10,476	46,500
Carriages and Wagons.....	5	72,000	85	31,800	94,000
Carriage and Wagon Material.....	2	30,000	37	17,900	70,000
Clothing, Men's.....	21	226,500	400	83,100	350,572
Coffee and Spices, Roasted and Ground.....	3	10,500	7	2,760	28,500
Coffins and Burial Cases and Undertaker's Goods.....	4	17,900	9	3,960	19,300
Confectionery.....	8	35,000	39	9,360	49,600
Cooperage	3	3,000	10	3,500	6,000
Cotton Goods.....	2	261,600	240	60,000	225,000

MANUFACTURING STATISTICS OF READING.—Continued.

INDUSTRIES.	No. of Establishments.	Capital Invested, including Real Estate.	No. of Hands Employed.	Amount of Wages Paid during 1881.	Value of Product.
Dentistry, Mechanical	6	\$6,600	9	\$2,480	\$16,400
Engraving and Die Sinking.....	2	500	2	936	2,500
Fertilizers.....	1	6,000	5	3,300	7,500
Files.....	1	3,500	3	950	2,150
Furniture, including Chairs.....	6	129,000	84	45,250	137,000
Flouring and Grist Mills.....	3	105,000	18	9,000	180,000
Gas.....	2	315,000	24	12,500	92,500
Glue	1	6,500	6	1,260	9,400
Hair Work.....	3	2,000	3	1,600	3,500
Hardware, Builders and Small.....	3	658,750	859	275,000	762,000
Hats, not Wool, and Caps.....	3	2,000	5	2,520	5,938
Ice.....	11	46,000	95	11,400	36,150
Iron Bolts, Nuts, Washers and Rivets.....	3	208,000	240	78,000	375,000
Iron Castings, including Pipe.....	3	295,630	338	89,100	275,625
Iron Forgings.....	1	32,000	70	35,000	125,000
Iron, Pig	6	850,000	225	110,550	1,131,416
Iron, Plate, Sheet and Pipe.....	5	1,200,000	1,700	715,000	4,000,000
Iron and Steel Rails.....	1	600,000	300	172,000	1,250,000
Leather, Tanned & Curried, also Glove, Sheep & Calf Kid.	6	186,000	72	33,392	204,350
Lime.....	5	7,675	12	4,800	11,905
Liquors, Distilled.....	1	60,000	6	2,500	56,250
Lock and Gunsmithing.....	3	5,100	6	2,285	6,550
Locomotive Engines and Cars, including Repairs*.....	1	1,463,621	2,295	1,440,000	2,273,744
Looking Glass and Picture Frames.....	2	2,500	3	900	4,395
Machinery, Stationary Engine, Hat and Repairs.....	6	304,120	372	173,850	678,000
Mantels, Slate and Marble.....	2	4,500	9	3,900	10,000

* This includes Foundries, Forge and all other workshops of the Phila. & Reading R. R. Co. in this City, except the Philada. & Reading Coal and Iron Co.'s Rolling Mill, which is separately given.

Marble and Stone Works.....	5	\$114,000	44	\$19,400	\$86,500
Mineral and Soda Water.....	2	1,600	4	1,400	7,200
Models and Patterns.....	1	1,000	2	750	1,155
Musical Instruments, Organs and Material.....	2	35,000	32	24,000	65,000
Oil, Refined.....	2	9,000	12	3,570	16,700
Painting	10	19,500	84	30,500	93,000
Paints.....	1	110,000	14	5,000	130,000
Paper, Book and Manilla.....	2	140,000	95	32,800	265,000
Patent Medicines and Compounds.....	4	3,000	7	900	8,876
Photographing.....	5	5,500	19	8,280	17,500
Planing Mill Work.....	3	105,000	103	56,720	149,000
Printing, Book and Job.....	12	45,000	50	20,000	60,000
Printing, Newspaper.....	17	330,000	300	130,000	500,000
Ropes, Cordage and Twine.....	1	50,000	85	16,288	55,000
Saddlery and Harness.....	9	28,500	30	13,500	50,835
Shirts, (Custom Made).....	4	4,800	48	8,600	29,500
Sandstone, Building.....	2	2,000	26	7,000	15,537
Soap and Candles.....	2	7,000	3	1,950	12,730
Spectacles and Watch and Clock Repairs.....	14	127,800	226	72,800	98,000
Steam Boilers and Plate Iron Works.....	3	90,000	172	37,000	112,000
Steam Fire Engines, Hose Carriages, Hook and Ladder Trucks and Firemen's Supplies.....	1	20,000	25	9,876	30,000
Stone and Earthenware.....	1	20,850	6	3,717	7,000
Stoves, Heaters, Ranges and Hollow Ware.....	2	270,000	300	146,400	410,000
Tar Pavements.....	3	1,500	6	2,500	5,000
Terra Cotta Ware.....	1	70,000	20	9,000	55,000
Tin, Copper and Sheet Iron Ware.....	20	125,500	71	40,100	195,000
Tobacco, Cigars.....	11	119,000	348	54,635	271,000
Umbrellas and Canes.....	2	2,500	2	1,500	5,000
Upholstering	2	600	8	1,200	4,000
Wheelwrighting	5	7,000	10	6,000	15,000
Wines, Native.....	11	17,000	20	2,050	6,250
Woolen Goods.....	3	245,287	167	63,469	300,551
Wool Hats. (258,000 Dozens).....	10	672,000	830	199,200	645,000
TOTALS.....	455	\$10,712,463	11,798	\$4,783,521	\$17,600,313

TABLE No. 2.

Showing General Traffic Tonnage Received at Reading by all the Railroads and Canal Lines.

In 1876—467,000 Tons.

" 1877—589,000	"	Increase over 1876—26 per cent.
" 1878—600,000	"	" " 1877—2 " "
" 1879—825,000	"	" " 1878—37 ½ per cent.
" 1880—904,000	"	" " 1879—9 ½ per cent.
" 1881—950,000	"	" " 1880—5 per cent.
1881 more than 1876—103 ½ per cent.		

General Traffic Tonnage Sent from Reading by all the Railroads and Canal Lines.

In 1876—258,000 Tons.

" 1877—274,000	"	Increase over 1876—6 per cent.
" 1878—314,000	"	" " 1877—15 per cent.
" 1879—358,000	"	" " 1878—14 per cent.
" 1880—408,000	"	" " 1879—16 per cent.
" 1881—440,000	"	" " 1880—7 ¾ per cent.
1881 more than 1876—70 ½ per cent.		

The aggregate tonnage into Reading as given in the foregoing statement, embraces the following Anthracite and Bituminous Coal tonnage.

In 1876—161,878.01 Tons.

" 1877—214,057.12	"	Increase over 1876—32 per cent.
" 1878—196,491.09	"	Decrease over 1877—8 per cent.
" 1879—269,383.07	"	Increase over 1878—37 per cent.
" 1880—295,477.03	"	" " 1879—9 ½ per cent.
" 1881—312,000.00	"	" " 1880—5 ½ per cent.
1881 more than 1876—92 ½ per cent.		

TABLE No. 3.—Showing the Condition of the Building, Loan & Savings Associations, in the City of Reading, Dec. 31, 1881.

NAME.	Date of Organization.	Value of Share when matured.	Present value of Share last annual report.	ASSETS.	RECEIPTS DURING 1881.
America Building and Savings Association.....	Jan., 1878	\$200 00	\$68 36	\$28,942 36	\$7,252 00
Berks County Building and Loan Association.....	Aug., 1869	250 00	190 84	260,363 84	10,679 86
Berks County Building and Loan Association, No. 2....	Sept., 1873	250 00	96 00	50,338 23	4,165 37
Central Loan and Savings Association.....	Oct., 1873	200 00	128 00	28,672 39	4,332 00
Columbia Building and Savings Association, No. 3.....	Jan., 1878	200 00	62 93	53,559 07	12,515 45
Equitable Savings and Loan Association.....	May, 1870	200 00	197 38	50,399 26	25,562 01
Excelsior Building, Loan and Savings Association.....	Dec., 1873	200 00	156 88	26,825 01	6,179 78
Franklin Building and Savings Association, No. 2.....	Sept., 1875	300 00	152 56	94,139 99	21,144 03
Friendship Building and Savings Association, No. 2....	May, 1879	200 00	29 36	53,099 84	34,321 84
Germania Building and Savings Association, No. 2.....	June, 1881	200 00	13 69	27,351 97	27,309 00
Good Will Building and Savings Association.....	May, 1874	300 00	193 50	30,028 00	10,201 46
Harmonie Building and Savings Association, No. 2.....	May, 1879	200 00	27 38	18,481 67	13,561 71
Homestead Building and Savings Association, No. 2....	May, 1876	300 00	88 66	110 210 16	24,953 70
Homestead Building and Savings Association, No. 3....	May, 1880	300 00	14 40	24,493 23	22,656 00
Industry Building and Savings Association.....	May, 1874	250 00	126 61	115,726 45	24,126 00
Jefferson Building and Savings Association, No. 2.....	Feb., 1880	200 00	14 28	21,879 34	22,820 11
Keystone Building and Savings Association.....	Dec., 1871	200 00	185 31	136,206 73	24,705 00
Keystone Building and Savings Association, No. 2.....	March, 1881	200 00	14 01	27,078 60	28,880 50
Lafayette Building and Savings Association.....	Feb., 1873	200 00	163 02	58,427 39	14,272 30
*Marion Building Association.....	Aug., 1874	250 00	157 63	9,457 59	1,153 80
National Building and Savings Association.....	July, 1877	200 00	62 59	49,448 94	13,888 14
Neversink Building and Savings Association.....	April, 1872	500 00	382 34	297,085 06	52,722 11
Neversink Building and Savings Association, No. 2....	May, 1880	500 00	27 57	24,815 97	22,122 25
Reading German Building and Savings Association.....	Feb., 1872	200 00	143 46	151,207 08	28,357 03
Schiller Building and Savings Association, No. 2.....	July, 1874	500 00	253 00	182,925 21	44,496 27
Schuylkill Building and Savings Association.....	April, 1873	500 00	293 17	186,163 52	32,881 86
Union Building and Savings Association, No. 2.....	May, 1880	200 00	13 48	17,007 00	12,886 25
Washington Building and Savings Association, No. 2....	Feb., 1880	200 00	13 78	24,238 45	22,400 00
West Reading Saving Fund & Loan Assoc'n, No. 2....	May, 1881	200 00	9 00	12,000 00	12,600 00
†William Penn Building and Savings Association.....	Sept., 1881	200 00			
TOTAL,				\$2,170,572 35	\$583,145 83

* Only 60 active shares. † No report yet made.

TABLE No. 4.

Giving the Report of the National Banks of the City of Reading at the close of business December 31, 1881.

FARMERS' NATIONAL BANK.

RESOURCES.		LIABILITIES.	
Loans and discounts.....	\$1,043,844 63	Capital stock paid in.....	\$400,020 00
Overdrafts	1,463 42	Surplus fund.....	100,000 00
U. S. Bonds to secure circulation.....	400,000 00	Undivided profits.....	94,228 50
U. S. Bonds on hand.....	100,000 00	National Bank notes outstanding	359,990 00
Other stocks, bonds and mortgages..	5,206 00	Dividends unpaid.....	21,202 45
Due from approved reserve agents...	131,433 25	Individual deposits subject to	
Due from other National Banks.....	30,123 51	check	914,542 00
Due from State Banks and Bankers..	2,197 46	Due to other National Banks.....	99,226 65
Real estate, furniture and fixtures...	55,000 00	Due to State Banks and Bankers.	669 37
Checks and other cash items.....	27,579 19		
Bills of other banks.....	31,215 09		
Fractional paper currency, nickels			
and pennies.....	148 09		
Specie.....	75,690 00		
Legal tender notes.....	60,000 00		
Redemption fund with U. S. Treas-			
urer (5 per cent. of circulation).....	18,000 00		
Due from U. S. Treasurer, other than			
5 per cent. redemption fund.....	7,978 33		
Total.....	\$1,989,878 97	Total.....	\$1,989,878 97

NATIONAL UNION BANK.

RESOURCES.		LIABILITIES.	
Loans and discounts.....	\$655,710 19	Capital stock paid in.....	\$200,000 00
Overdrafts.....	1,616 99	Surplus funds.....	75,000 00
U. S. Bonds to secure circulation.....	200,000 00	Undivided profits.....	24,854 39
U. S. Bonds on hand.....	150,000 00	National Bank notes outstanding	180,000 00
Due from approved reserve agents...	12,400 02	Dividends unpaid.....	1,484 00
Due from other National Banks.....	40,473 63	Individual deposits subject to	
Due from State Banks and Bankers.	3,532 78	check	861,687 65
Real estate, furniture and fixtures...	15,000 00	Due to other National Banks.....	6,633 18
Current expenses and taxes paid.....	5,005 52	Due to State Banks and Bankers.	674 66
Checks and other cash items.....	35,749 73		
Bills of other banks.....	27,424 00		
Fractional paper currency, nickels			
and pennies.....	1,151 02		
Specie	123,270 00		
Legal tender notes.....	70,000 00		
Redemption fund with U. S. Treas-			
urer (5 per cent. of circulation).....	9,000 00		
Total.....	\$1,350,333 88	Total.....	\$1,350,333 88

TABLE No. 4.—Continued.

FIRST NATIONAL BANK.

RESOURCES.		LIABILITIES.	
Loans and discounts.....	\$596,665 01	Capital stock paid in.....	\$200,000 00
Overdrafts	258 96	Surplus fund.....	25,571 63
U. S. Bonds to secure circulation.....	200,000 00	Undivided profits.....	64,286 89
U. S. Bonds to secure deposits.....	50,000 00	National Bank notes outstanding	180,000 00
U. S. Bonds on hand.....	3,700 00	Dividends unpaid.....	97 00
Due from approved reserve agents...	89,652 52	Individual deposits subject to	
Due from other National Banks.....	77,852 05	check	705,408 69
Due from State Banks and bankers.	502 01	Cashier's checks outstanding.....	130,50
Real estate, furniture, and fixtures..	33,745 10	United States deposits.....	40,852 30
Current expenses and taxes paid.....	6,189 20	Deposits of U. S. disbursing offi-	
Premiums paid.....	2,812 00	cers	1,963 50
Checks and other cash items.....	10,735 17	Due to other National Banks.....	35,143 62
Bills of other banks.....	20,211 00	Due to State Banks and Bankers.	788 53
Fractional paper currency, nickels			
and pennies.....	163 64		
Specie	122,756 00		
Legal tender notes.....	30,000 00		
Redemption fund with U. S. Treas-			
(5 per cent. of circulation).....	9,000 00		
Total.....	\$1,254,242 66	Total	\$1,254,242 66

COMMERCIAL NATIONAL BANK.

(Recently Organized.)

RESOURCES.		LIABILITIES.	
Loans and discounts.....	\$246,791 80	Capital stock paid in.....	\$150,000 00
U. S. Bonds to secure circulation.....	150,000 00	Surplus fund.....	15,000 00
Due from approved reserve agents...	10,251 32	Undivided profits.....	7,774 69
Due from other National Banks.....	6,452 47	National Bank notes outstanding	135,000 00
Due from State Banks and Bankers.	4,491 74	Individual deposits subject to	
Real estate, furniture and fixtures...	11,174 41	check.....	147,423 67
Current expenses and taxes paid.....	1,037 64	Demand certificates of deposit...	3,230 00
Premiums paid.....	127 83	Due to other National Banks.....	780 40
Checks and other cash items.....	4,370 75	Due to State Banks and Bankers.	783 80
Bills of other Banks.....	1,515 00		
Fractional paper currency, nickels			
and pennies.....	304 30		
Specie.....	7,895 30		
Legal tender notes.....	8,830 00		
Redemption fund with U. S. Treas-			
urer (5 per cent. of circulation).....	6,750 00		
Total.....	\$459,992 56	Total.....	\$459,992 56

TABLE No. 4.—Continued.

SECOND NATIONAL BANK.

(Recently Organized.)

RESOURCES.		LIABILITIES.	
Loans and Discounts.....	\$74,071 11	Capital stock paid in.....	\$95,150 00
U. S. Bonds to secure circulation.....	70,000 00	Undivided profits.....	2,152 29
Due from approved reserve agents...	17,605 38	National Bank notes outstanding	63,000 00
Due from other National Banks.....	6,426 78	Individual deposits subject to	
Due from State Banks and Bankers.	13,917 47	check.....	70,170 79
Real estate, furniture and fixtures...	21,816 06		
Current expenses and taxes paid.....	1,359 24		
Premiums paid.....	1,162 50		
Checks and other cash items..	836 98		
Bill of other Banks.....	7,390 00		
Fractional paper currency, nickels			
and pennies.....	100 76		
Specie.....	8,108 80		
Legal tender notes.....	4,528 00		
Redemption fund with U. S. Treas-			
urer (5 per cent. of circulation).....	3,150 00		
Total.....	\$230,473 08	Total.....	\$230,473 08

Total Banking Capital \$1,045,170.00.

TABLE No. 5.

POPULATION OF THE CITY OF READING.

Year.	Population.	Percentage of Increase.	
1752.....	378.		
1769.....	1,200.		
1790*.....	2,235.		
1800.....	2,386.	Increase over 1790— 6.7 per cent.	
1810.....	3,462.	“ “	1800—45.0 “ “
1820.....	4,330.	“ “	1810—25.0 “ “
1830.....	5,631.	“ “	1820—30.0 “ “
1840.....	8,392.	“ “	1830—49.0 “ “
1850.....	15,743.	“ “	1840—87.6 “ “
1860.....	23,162.	“ “	1850—47.1 “ “
1870.....	33,930.	“ “	1860—46.5 “ “
1880.....	43,280.	“ “	1870—27.5 “ “

* First Official Census.

Total Increase, 1880 over 1790—1836.4 per cent.

TABLE No. 6.

READING POST OFFICE.

We are indebted to Geo. K. Whitner, Postmaster, for the following information, showing the amount of business transacted by the Reading Post Office during the year ending December 31st, 1881.

Money Order Division.

RECEIPTS.

Domestic Money Orders issued.....	\$67,949 23
International Orders issued.....	11,962 72

DISBURSEMENTS.

Domestic Orders paid.....	\$104,329 76
International Orders paid.....	1,617 58

Registered Letter Division.

Registered Letters in Transit.....	4,103
Registered Letters for City Delivery.....	6,519
Registered Letters sent from City.....	4,292
Total amount of Matter Registered:.....	14,914

Carriers' Division.

Mailed Letters Received and Delivered.....	925,758
Papers, &c., Received and Delivered.....	605,818
Mailed Postal Cards Received and Delivered.....	327,263
Letters Collected.....	408,016
Papers, &c., Collected.....	62,160
Postal Cards Collected.....	203,620

Stamp and Envelope Division.

Amount Received from Stamps, Stamped Envelopes, Wrappers, &c.....	\$37,900 58
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TABLE No. 7.

INTERNAL REVENUE.

(Office, 8th Dist., Reading, Pa.)

We are indebted to J. T. Valentine, Collector for the Eighth Internal Revenue District of Pennsylvania, including the Counties of Berks, Lebanon, Lehigh and Schuylkill, for the following statement of the receipts from the several sources of Revenue for the calendar years ending December 31st, 1880 and December 31st, 1881, respectively :

Sources of Revenue.	Year ending Dec. 31, 1880.	Year ending Dec. 31, 1881.	Increase.	Decrease.
Distilled Spirits.....	\$103,064 65	\$114,797 72	\$11,733 07	
Tobacco and Cigars.....	382,040 70	436,429 13	54,388 43	
Fermented Liquors.....	92,932 47	105,185 82	12,253 35	
Banks and Bankers.....	5,944 88	7,095 35	1,150 47	
Legacies and Successions.....	264 00	1,477 12	1,213 12	
Penalties, &c.....	6,611 27	803 37	.....	\$5,807 90
TOTAL.....	\$590,857 97	\$665,788 51	\$74,930 54	\$5,807 90

The County of Berks pays fully one-half of the above receipts.

Number of Grain Distilleries in operation during the year 1881.....	5
Number of Gallons of Spirits produced " " " "	69,414
" " " " " sold " " " "	62,299
Number of Fruit Distilleries in operation during the year 1881.....	28
Number of Gallons of Brandy produced " " " "	10,960
" " " " " sold " " " "	14,186
Number of Rectifiers in the year 1881.....	15
Number of Gallons of Spirits received for rectification during the year 1881.	150,981
Number of Gallons of Spirits rectified during the year 1881.....	152,030
Number of Breweries in the year 1881.....	20
Number of Barrels of Malt Liquors produced during the year 1881.....	113,730
" " " " " " sold " " " "	116,190
Number of Cigar Factories in the year 1881.....	352
Number of Cigars manufactured during the year 1881.....	68,635,000
" " " sold during the year 1881.....	67,300,175
Number of Tobacco Factories in the year 1881.....	8
Number of Pounds of Tobacco manufactured during the year 1881.....	65,300
" " " " " sold during the year 1881	65,238

REPORT OF COMMITTEE ON CITY AFFAIRS.

To the President and Directors of the Board of Trade:

GENTLEMEN:—The Committee on City Affairs would respectfully report that the different Departments of the City Government are being economically and judiciously managed. The only cause for complaint has been the poor material from which our highways have been made, and this we have every reason to believe will be remedied by the use of better material, a better system of construction and by the aid of the steam road roller. We would here impress upon Councils to use only hard limestone spalls, believing that much of the material heretofore used was of too soft a nature.

We cannot but congratulate ourselves that notwithstanding the widespread and unprecedented drouth of last season, the City of Reading passed through the ordeal with an abundance of pure mountain water, and we hail with pleasure the assurance that our Water Commissioners are already taking steps to increase the storage capacity of the works, thereby giving new manufacturers a sure guarantee of plenty of water. (See Description of Reading, page 47 to 58). Since this Report was made the Water Board has contributed for the building of a reservoir with a capacity of 27,000,000 gallons. The sources of Revenue and Expenditures of the City of Reading for the year ending December 31, 1881, were as follows:

Revenue.

Received from Taxes.....	\$146,125 33
“ “ Water	68,431 75
	<hr/>
	\$214,557 08

Disbursements.

Interest on City Debt.....	\$37,023 50
Cash for Sinking Fund.....	5,628 68
State Tax on Debt.....	2,491 32
Department of Finances.....	3,029 00
“ “ Police	35,888 60
“ “ Law.....	1,297 65
“ “ Highways and Paving.....	26,490 76
“ “ Tax.....	1,916 79
“ “ City Property.....	2,401 07
“ “ Health.....	1,206 92
“ “ Markets	501 35
“ “ Surveys.....	2,596 43
“ “ Fire	15,631 35
“ “ Printing.....	2,455 94
“ “ Sewers.....	8,066 10
	<hr/>
	\$146,625 46

WATER DEPARTMENT :

Interest on Debt.....	\$29,557 16
Sinking Fund.....	15,000 00
State Tax on Debt.....	2,150 00
Maintenance of Department.....	15,787 22
	<hr/>
	62,494 38
	<hr/>
	\$209,119 84

DEBT AND FOR WHAT PURPOSES CONTRACTED :

City Debt.....	\$619,501 10
Water Debt.....	502,500 00

ASSESSED VALUATIONS.....22,500,000 00

RATE OF TAXATION.

TAX.	1ST CLASS. Hotels, Stores and Boarding Houses.	2ND CLASS. Private Dwel- lings and Manufactories.	3RD CLASS. Unimproved Property.
City..	8	5 $\frac{1}{3}$	4
County, (Separate Valuation and Assess- ment) ..	2 $\frac{1}{2}$	2 $\frac{1}{2}$	2 $\frac{1}{2}$
School, Separate Assessment)..	3	3	3
TOTAL MILLS OR PER \$100	13 $\frac{1}{2}$ \$1 35	10 $\frac{83}{100}$ \$1 00 $\frac{83}{100}$	9 $\frac{1}{2}$.95

WATER RATES.

The Tax and Water Rates of the City are lower than any other City of its size in the Union, as has been shown by the Table of Comparative Rates, to be found on page 56, Description of Reading.

FIRE DEPARTMENT.

Reading boasts of the best equipped, most thoroughly disciplined and orderly volunteer Fire Department in the United States, composed of brave and determined men and the finest apparatus. With the aid of the Gamewell Fire Alarm Telegraph, the Fire Department is a source of just pride to the citizens of Reading.

The records show that Reading is the most fortunate City in the Union, in freedom from destructive conflagrations.

Fire Alarm.—Gamewell System.

Fire Department.—Volunteer.

Number of Engines, 7; Hook and Ladder Trucks, 2; Hose Carriages, 9.

Total number of fires during the year ending December 31, 1881, 51.

Total loss, \$21,069.76, or \$7,702.99 less than the total loss of 1880.

PUBLIC SCHOOLS.

The Schools of Reading are managed by a Board of Control independent of the City Government, and are in an excellent state of discipline, with a good corps of teachers. The finances of the Department have been so ably managed, that although a large

number of well arranged and commodious school houses have been built in the last few years, neither the taxes nor the debt have been increased.

NUMBER AND DIVISION OF SCHOOLS.

High Schools: male, 1; female 1.

Grammar Schools: 16.

Secondary Schools 23.

Assistant Secondary Schools: 18.

Principal Primary Schools: 39.

Assistant Primary Schools: 46.

Total number of Schools: 144.

ASSETS:

Value of Buildings	\$262,000
“ “ Furniture	19,800
Cash on hand	25,587
Taxes in process of collection	12,000
Total assets	\$319,387

Liabilities	\$63,500
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Expenditures during the year 1881	\$70,892.00.
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Enrollment (taken from the month of November, 1881). High Schools, 315; Grammar Schools, 618; Secondary Schools, 1,707; Primary Schools, 4,109. Total, 3,389; average attendance, 90 per cent. For general account of educational facilities, (See Description of Reading, pages 116–118).

CHURCHES.

The following is a summary of the number of the different ecclesiastical denominations:

			TOTAL.
Lutheran,	English, 5	German, 2	7
Reformed,	“ 3	“ 1	4
Presbyterian,	“ 3	“ 0	3 (1 colored.)
Roman Catholic,	“ 1	“ 1	2

Baptist,	English, 2	German, 0	2
Protestant Episcopal,	" 3	" 0	3
Methodist Episcopal,	" 4	" 0	4 (1 colored.)
Evangelical Association,	" 1	German & English, 2	3
Universalist,	" 1	German, 0	1
United Brethren,	" 2	" 0	2
Friends,	" 2	" 0	2
	<hr/>	<hr/>	<hr/>
	29	4	33

The health of the City of Reading compares favorably with that of any other City in the United States.

The Statistics of Mortality and Comparative Statement will be found on pages 105 and 106, Description of Reading.

F. P. HELLER, *Chairman.*

GEORGE P. ZIEBER,

LEWIS KREMP,

HENRY D. HIGH,

F. S. JACOBS.

FIRM, COMPANY AND INDIVIDUAL MEMBERSHIPS OF THE READING BOARD OF TRADE, DURING
THE YEAR ENDING DECEMBER 31st, 1881.

NAME OF FIRM.	MEMBERS.	BUSINESS.	BUSINESS LOCATION.
Allen & Lance	{ L. H. Allen }	Wholesale Lumber	42 N. Sixth.
Ammon, E. S.	{ Geo. F. Lance }	Dry Goods	354 Penn.
Barbey, P. & Son	{ Peter Barbey }	Brewers	435 Penn.
Bausher, T. D.	{ John Barbey }	Flour, Wood and Coal	N. 5th Cor. Woodward,
Bechtel, John R. . . . .	. . . . .	Merchant Tailor	418 Penn.
Bernhardt & Koch	{ Franklin S. Bernhart }	Flour, Feed, Grain, &c.	22 to 26 N. Eighth.
Birch, C. S.	{ James Koch }	Propr. American House	Penn Cor. Fourth.
Boger & Welsh,	{ William H. Boger }	Job Printers	750 Penn.
Boltz, Jos. S. & Co.	{ William H. Welsh }	Hats and Caps	535 Penn.
Bowman, Jno. L.	{ Joseph S. Boltz }	Wholesale Liquors	244 Penn.
Boyer, H. F. & J. F.	{ William H. Price }	Livery	Cherry, Cor. Pearl.
Boyer, Jerome L.	{ Howard F. Boyer }	Supt. Chest. Hill I. Ore Co.	Columbia, Lancaster Co., Pa.
Breneiser, Chas. & Co.	{ John F. Boyer }	Tobacconists	662 Penn.
Brobst & Rentschler	{ Chas. Breneiser }	Wholesale Liquors	249 N. Eighth.
Brooke, John B.	{ Henry D. Breneiser }	Physician	44 N. Fourth,
Brown, B. H.	{ Thomas Breneiser }	Dry Goods	512 Penn.
Brown, Jas. C.	{ Frank Brobst }	Hats and Caps	609 Penn.
	{ Milton F. Rentschler }		

Brown, T. V.	.	.	.	.	.	.	.	.	Dentist	510 Court.
Brumbach, A. J.	.	.	.	.	.	.	.	.	Propr. Woolen Mills	Black Bear, P. O. Reading.
Buch, Sam'l	.	.	.	.	.	.	.	.	Wholesale Liquors and Distiller	527 Penn.
Burkholder, E.	.	.	.	.	.	.	.	.	Grocer	101 N. Fifth.
Burkholder, S. R.	.	.	.	.	.	.	.	.	Watchmaker and Jeweler	714 Penn.
Byers, Robert	.	.	.	.	.	.	.	.	Late Manager G. A. & P. Tea Co.	619 Penn.
Cheetham, J. H.	.	.	.	.	.	.	.	.	Planing Mill	Carpenter below Franklin.
Christoph, Jos.	.	.	.	.	.	.	.	.	Merchant Tailor	707 Penn.
Coleman, W. S. S.	.	.	.	.	.	.	.	.	Book and Job Printer	Sixth and Court Streets.
Cressman, C. M. & Son	.	.	.	.	.	.	.	.	Merchant Tailors	702 Penn.
Crouse & Co.	.	.	.	.	.	.	.	.	Packers of Leaf Tobacco and Cigar Manufacturers	22 to 28 S. 6th and 636 Court.
Curtis, J. & Co.	.	.	.	.	.	.	.	.	Shoe Dealers	527 1/2 Penn.
Dauth, Lewis	.	.	.	.	.	.	.	.	Stoves and Tinware	23 N. Eighth.
Deeter & High	.	.	.	.	.	.	.	.	Dry Goods and Groceries	246 Penn.
DeLong Bros.	.	.	.	.	.	.	.	.	Tanners and Curriers	Ninth, Corner Muhlenberg and Chestnut below Third.
Delp, G. H. & Co.	.	.	.	.	.	.	.	.	Dry Goods and Groceries	764 Penn.
Deppen, W. P.	.	.	.	.	.	.	.	.	Brewer	S. Tenth, Corner Chestnut.
Dives, Pomeroy & Stewart.	.	.	.	.	.	.	.	.	Dry Goods and Notions	442 and 444 Penn.
Douglas & Connard	.	.	.	.	.	.	.	.	Brass Works	Sixth, Corner Chestnut.
Eckert & Bro.	.	.	.	.	.	.	.	.	Iron Manufacturers	P. & R. R. R. below South.
Eckert, Geo. J.	.	.	.	.	.	.	.	.	Fire Brick	458 Canal.

FIRM, COMPANY AND INDIVIDUAL MEMBERSHIPS OF THE READING BOARD OF TRADE.—Continued.

NAME OF FIRM.	MEMBERS.	BUSINESS.	BUSINESS LOCATION.
Eckert, Henry S. . . . .	. . . . .	Prest. Farmers' Nat. Bank	445 Penn.
Fink, J. & Co.	{ John Fink }	Planing Mill	Canal, foot of Pine.
Flatt, Jos. O. & Co.	{ Amos Huyett }	Brush Manufacturers	641 to 645 Pine.
Fleishman, B.	{ Joseph O. Flatt }	Wholesale Liquors	727 Penn.
Fox, E. S. & Co.	{ William O. Flatt }	Terra Cotta Works	Foot of Franklin.
Francis, D. S.	{ Eli S. Fox }	Late Prop'r Spirit of Berks	Mineral Spring Road near 17th. .
Frantz, C. C.	{ William Fox }	Carpenter	635 Court.
Frill, Geo. R.	{ George K. Whitner }	Coal Dealer	216 N. Eighth.
Gasser, Geo. . . . .	. . . . .	Planing Mill	Green Cor. Moss.
Geier, Osmund . . . . .	. . . . .	Prop'r Fairview Park	42 N. Ninth.
Geissler, Henry C. . . . .	. . . . .	Stoves and Tinware	731 Penn.
Getz, H. S. & Co.	{ Hiram S. Getz }	Marble Mill	Canal Cor. Spruce.
Gilbert, E. W.	{ James K. Getz }	Merchant Tailor	337 Penn.
Gingrich, J. A. . . . .	. . . . .	Druggist	134 Penn.
Gordon, R. H. . . . .	. . . . .	Tanner and Currier	542 S. Sixth.
Grath, A. C. . . . .	. . . . .	Machinists' and Manfrs' Supplies	627 to 631 Franklin.
Greth, D. P. . . . .	. . . . .	Grocer	106 S. Fifth.
Griesemer, Geo. W. & Bro.	{ George W. Griesemer }	Roofing Slate Manufacturers	16 N. Front.
Grim, J. K. & Son,	{ Edward K. Griesemer }	Wholesale Grocers	138 N. Sixth.
	{ Jonathan K. Grim }		
	{ Chester A. Grim }		

Grist, B. W. & Co. Limited	{ Benj. W. Grist W. Harry Orr Jesse Orr }	Foundry and Machine Shop	Carpenter Cor. Cherry
Gross, David . . . . .	. . . . .	Lumber Dealer	302 N. Eighth.
Hagy, W. K. . . . .	. . . . .	Insurance	41 N. Sixth.
Hantsch, P. H. . . . .	. . . . .	Tobacconist	637 Penn.
Heckman, Geo. . . . .	. . . . .	Merchant Tailor	402 Penn.
Heilman, L. & Co.	{ Lewis Heilman William G. Von Nieda Henry F. Fegley }	Hardware	741 Penn.
Heller, F. P. . . . .	. . . . .	Lumber Dealer	205 Penn.
Henninger, Chas. & Son	{ Charles Henninger F. Irwin Henninger }	Undertakers	746 Penn.
Hiester, E. C. . . . .	. . . . .	Local Express	21 S. Sixth.
High & Geiger	{ Henry D. High Isaac Geiger Herman N. Geiger, }	Lime, Sand, Coal, &c.	Sixth Cor. Canal.
Hillegass & Mast	{ De Witt C. Hillegass John R. Mast }	Tobacconists	728 Penn.
Hoff & Bro.	{ Augustus W. Hoff Charles L. Hoff }	Hardware	403 Penn.
Hoff, H. A. . . . .	. . . . .	Dry Goods and Carpets	408 Penn.
Hughes, G. W. . . . .	. . . . .	Wines and Liquors	765 Penn.
Illig, J. C. & Bro.	{ John C. Illig Thomas B. Illig }	Dry Goods	420 Penn.
Jackson & Obold	{ Joseph T. Jackson John Obold }	Hardware	831 Penn.
Jackson Bros.	{ Charles L. Jackson William L. Jackson }	Furniture	849 Penn.
Jacobs & Rhoads	{ Francis S. Jacobs John H. Rhoads }	Brokers and Real Estate Agents	25 N. Sixth.

FIRM, COMPANY AND INDIVIDUAL MEMBERSHIPS OF THE READING BOARD OF TRADE.—Continued.

NAME OF FIRM.	MEMBERS.	BUSINESS.	BUSINESS LOCATION.
Jameson & Co.	{ James Jameson William A. Medlar Charles S. Bachman James P. Sellers }	Clothiers	601 Penn.
Johnston, Adam & Son	{ Adam Johnston Henry Johnston }	Machinists and Car Builders	Chestnut Cor. Eighth.
Jones & Clous	{ Nicholas Jones John F. Clous }	Late Hardware Dealers	300 and 302 Penn.
Kantner, F. J. . . . .	. . . . .	Organ Manufacturer	517 Penn.
Kaucher, Jno. R. . . . .	. . . . .	Cashier First National Bank	540 Penn.
Kaufman, Wm. M. & Co.	{ William M. Kaufman Zachariah M. Kaufman E. Burd Grubb Henry S. Eckert }	Pig Iron and Blooms	Sixth Cor. Walnut.
Keever, E. F. . . . .	. . . . .	Roofing Slate Manufacturer	17 N. Sixth.
Keffer, F. & Co.	{ Francis Keffer James A. Keffer Charles A. Keffer }	Queensware and China	520 Penn.
Keim, deB. Randolph . . . . .	. . . . .	Author and Journalist	Reading, Pa.
Keiser, David . . . . .	. . . . .	Carpets	739 Penn.
Keller & Schaeffer	{ Samuel C. Keller, Abram H. Schaeffer }	Brewers	242 Ash.
Keller, D. C. . . . .	. . . . .	Prop'r Central Park	Mineral Spring Road.
Kelley, W. H. . . . .	. . . . .	Grocer	850 N. Eighth.
Kendall Bros.	{ Henry T. Kendall Joseph V. Kendall }	Civil Engineers and R. E. Agents	511 Penn.
Kerper, Sam'l R. . . . .	. . . . .	Late Coal Dealer	46 N. Fourth.
Kershner, Geo. W. . . . .	. . . . .	Real Estate Agent	17 N. Sixth.

Kessler, C. F. & Bro.	{ Conrad F. Kessler . . . }	Hat Manufacturers	S. Eleventh, Cor. Spruce.
Kestner, Geo. L. & Co.	{ Jacob Kessler . . . }	Wholesale Liquors	142 N. Sixth.
Keystone Iron Works	{ George L. Kestner . . . }	Iron Manufacturers	Pine Cor. Third.
Kissinger, A. N. & Co.	{ Herman C. Rees . . . }	Flour	929 Penn.
Kline & Eppihimer	{ J. V. Craig . . . }	Dry Goods, Carpets, &c.	522 Penn.
Kline, A. S.	{ Jacob Snell . . . }	Produce	333 Penn.
Knabb, Albert & Co.	{ John H. Craig . . . }	Bolt Manufacturers	Lebanon Val. R. R. near Third.
Knabb, J. & Co.	{ Abraham N. Kissinger . . . }	Prop'rs Times and Journal	11 N. Sixth.
Koller, Jas. O.	{ George W. Kissinger . . . }	Merchant Tailor	454 Penn.
Kraemer & Co.	{ A. K. Kline . . . }	Prop'rs Stony Creek Woolen Mills	Stony Creek Mills.
Kremp, L.	{ Henry Eppihimer . . . }	Real Estate Agent	142 N. Ninth.
Landis, H. G.	{ Albert Knabb . . . }	Flour, Feed, Coal, &c.	S. Sixth, Cor. Chestnut.
Lauer, Fred'k	{ Benjamin Shalter, . . . }	Brewer	Third, Cor. Chestnut.
Lehman, F. W.	{ Jacob Knabb . . . }	Clerk	1001 Chestnut.
Leinbach Bros.	{ Thomas C. Zimmerman . . . }	Clothiers	851 Penn.
Leinbach, J. G. & Co.	{ William Sterrett . . . }	Woolen Manufacturers	N. Fourth above Elm.
Leippe, Jacob A.	{ Louis Kraemer . . . }	Bending Works	Second, Cor. Franklin.
Levan & Shade	{ George Gillbach . . . }	Dry Goods and Notions	441 Penn.
	{ Louis Grebe . . . }		
	{ Louis F. Kraemer . . . }		
	{ Joseph A. Leinbach . . . }		
	{ George A. Leinbach . . . }		
	{ Aaron S. Leinbach . . . }		
	{ William F. P. Davis . . . }		
	{ John Shadel . . . }		
	{ Wellington S. Levan . . . }		
	{ John S. Shade . . . }		

FIRM, COMPANY AND INDIVIDUAL MEMBERSHIPS OF THE READING BOARD OF TRADE.—Continued.

NAME OF FIRM.	MEMBERS.	BUSINESS.	BUSINESS LOCATION.
Levan, I. W. & Son	{ Isaac W. Levan }	Hat Manufacturers	Muhlenberg above Eleventh.
Levi, Sol.	{ John Levan }	Clothier	652 Penn.
Lewis, John E. . . . .	. . . . .	Sewing Machines	501 1/2 Penn.
Loeb, Henry . . . . .	. . . . .	Clothier	346 Penn.
Loeb, Joseph . . . . .	. . . . .	Pawn Broker	Philadelphia.
Luther, Martin . . . . .	. . . . .	Physician	20 S. Fifth.
Maidencreek Iron Co. . . .	{ Z. H. Maurer, Treas. . . }	Band, Hoop and Bar Iron . .	40 N. Sixth.
	{ H. A. Kauffman, Supt. . }		
McHose & Co.	{ Isaac McHose }	Fire Brick Manufacturers . .	Fourth and Canal.
	{ Levi Quier }		
	{ Jerome L. Boyer . . . }		
McIlvain, Wm. & Sons . . .	{ Wm. McIlvain }	Boiler and Plate Mill . . .	Neversink near Eighth.
	{ Morton C. McIlvain . . }		
	{ Wm. R. McIlvain . . . }		
Mellert Foundry & Mach. Co. limited	{ Wm. H. Ainey, Chairman }	Castings, Machinery, &c. . .	Second, Cor. Chestnut.
	{ Arnold Mellert, Secretary }		
	{ Peter D. Wanner, Treas. }		
Merritt Bros. & Co.	{ Thomas P. Merritt . . }	Lumber Dealers	Fourth and Spruce.
	{ A. Howard Merritt . . }		
	{ George W. Raudenbush . }	Plumber & Manager Opera House	8 S. Fifth.
Miller, Geo. M. . . . .	. . . . .	Hat Manufacturer	Fourth and Laurel.
Miller, John R. . . . .	. . . . .	
Miller, Printz & Co.	{ Joseph H. Miller . . . }	Machine and Brass Works . .	219 to 223 S. Ninth.
	{ Adam J. Shaaber . . . }		
	{ William Shaffer . . . }		
	{ John C. Printz . . . }		
	{ Samuel Davies . . . }		

Mishler, John D. . . . .	. . . . .	Manager Academy of Music	531 1/2 Penn.
Moers, J. Fred. . . . .	. . . . .	Marble Works	212 to 214 Penn.
Mohn, Jer. G. & Bros.	{ Jeremiah G. Mohn Richard Mohn John G. Mohn }	Hat Manufacturers	S. Eleventh below Chestnut.
Mould, Jonathan . . . . .	. . . . .	Dry Goods and Notions	645 Penn.
Myers & Heim	{ Samuel M. Myers Arthur W. Heim }	Clothiers	508 Penn.
Neihart, James . . . . .	. . . . .	Carpenter	406 S. Eleventh.
Obert, F. J. . . . .	. . . . .	Boiler Manufacturer	S. Ninth, opposite Cotton Mill.
O'Reilly & Co.	{ John F. O'Reilly Estate of P. O'Reilly }	Shoe Manufacturers	Penn, Cor. Fifth.
O'Reilly, James A.	{ Jesse Orr John R. Painter P. W. Nagle H. C. Posey William H. Schick Elijah Bull }	Attorney at Law	527 Court.
Orr, Painter & Co. . . . .	. . . . .	Stove & Hollow Ware Manufrs.	Canal below Chestnut.
Owen, B. F. . . . .	. . . . .	Book and Job Printer	517 Court.
Peacock & Orth	{ Charles Peacock John F. Orth }	Coal, Lime, Sand, &c.	201 Franklin.
Potteiger, A. W. . . . .	. . . . .	Dry Goods and Groceries	310 Penn.
Raser, John B. . . . .	. . . . .	Druggist	146 N. Sixth.
Reading Fire Ins. Co.	{ William A. Arnold, Prest. S. E. Ancona, Sec. & Treas. William M. Griscom Matthan Harbster William Harbster Henry C. England }	Fire Insurance	19 N. Fifth.
Reading Hardware Co. . . . .	. . . . .	Hardware Manufacturers	616 to 630 S. Sixth.
Reading Oil Co.	W. S. Miller, Manager	Oil Refiners	15 S. Sixth.

FIRM, COMPANY AND INDIVIDUAL MEMBERSHIPS OF THE READING BOARD OF TRADE.—Continued.

NAME OF FIRM.	MEMBERS.	BUSINESS.	BUSINESS LOCATION.
Reinoehl, W. H. & Co.	{ William H. Reinoehl Robert H. Savage Oscar B. Wetherhold }	Hat Manufacturers	S. Tenth, cor. Spruce.
Rhoads, Henry J.	{ Cyrus Rick John Rick Charles Rick James Rick }	Notions	641 Penn.
Rick Bros.	{ Cyrus Rick John Rick Charles Rick James Rick }	Hardware Manufacturers	N. Third, cor. Buttonwood.
Righter, J. K. . . . .	. . . . .	Millinery and Notions	514 Penn.
Ringel, C. A. . . . .	. . . . .	Bookseller and Stationer	625 Penn.
Ritter, Wm. S. . . . .	. . . . .	Propr. "Adler" and "News"	33 N. Sixth.
Robinson, W. H. . . . .	. . . . .	Iron Founder and Machinist	N. Second, cor. Court.
Roeder, Chas. M. . . . .	. . . . .	Life and Fire Insurance	446 Penn.
Rosenthal, W. . . . .	. . . . .	Propr. "Daily Post"	710 Penn.
Sallade, L. S. & Co.	{ Louisa S. Sallade Emma Grotevent Mary Rourke }	Milliners	650 Penn.
Saylor, B. & J.	{ Benjamin Saylor John Saylor }	Grocers	401 Penn.
Saylor, Chas. A. . . . .	. . . . .	Photographer	454 and 604 Penn.
Schaeffer, C. H. . . . .	. . . . .	Attorney at Law	524 Washington.
Schlechter & Henry	{ Gustavus A. Schlechter William A. Henry Charles E. Schrader }	Jewelry and Musical Instruments	600 and 602 Penn.
Schrader, Felix & Kline	{ Anthony A. Felix Jerome I. Kline }	Furniture Manufacturers	650 Penn.
Scull, Edward . . . . .	. . . . .	Plumber and Gas Fitter	10 S. Fifth.
Siegel, Eli . . . . .	. . . . .	Dentist	532 Penn.
Smink, F. C. . . . .	. . . . .	Manager Reading Iron Works	Cor. South and Mill.

Smith, J. Irwin	.	.	.	.	.	.	.	.	.	Bookseller and Stationer	.	.	.	549 Penn.
Snavely, A.	.	.	.	.	.	.	.	.	.	Jeweler	.	.	.	534 Penn.
Sohl, Seidel & Co.	.	.	.	.	.	.	.	.	.	Furniture Manufacturers	.	.	.	717 Penn.
Spang, H. W.	.	.	.	.	.	.	.	.	.	Electrician	.	.	.	6 S. Sixth.
Spang, J. K.	.	.	.	.	.	.	.	.	.	Iron Master	.	.	.	136 S. Fifth.
Sprecher, N. N.	.	.	.	.	.	.	.	.	.	Shirt Manufacturer	.	.	.	12 N. Sixth.
Stauffer, A. K.	.	.	.	.	.	.	.	.	.	Attorney at Law	.	.	.	521 Court.
Stauffer, W. M.	.	.	.	.	.	.	.	.	.	Stove Manufacturer	.	.	.	N. Third, near Lebanon Val. R. R.
Sternbergh, J. H.	.	.	.	.	.	.	.	.	.	Bolt and Nut Manufacturer	.	.	.	N. Third, above Buttonwood.
Stichter, J. L. & Son	.	.	.	.	.	.	.	.	.	Hardware	.	.	.	507 and 509 Penn.
Stolz, Christian	.	.	.	.	.	.	.	.	.	{ President Union Foundry and Manufacturing Co.	.	.	.	River near Exeter.
Streng, Martin,	.	.	.	.	.	.	.	.	.	Boot and Shoe Dealer	.	.	.	715 Penn.
Thalheimer, Albert	.	.	.	.	.	.	.	.	.	Cigar Box Manufacturer	.	.	.	143 Cedar.
Thomas, J. O.	.	.	.	.	.	.	.	.	.	Grocer	.	.	.	N. Fifth, Cor. Washington.
Van Reed, W.	.	.	.	.	.	.	.	.	.	Merchant Tailor	.	.	.	308 Penn.
Weitzel, E. D.	.	.	.	.	.	.	.	.	.	Produce	.	.	.	833 Penn.
Whitner, C. K.	.	.	.	.	.	.	.	.	.	Dry Goods	.	.	.	432 Penn.
Wilhelm, A. & Co.	.	.	.	.	.	.	.	.	.	Paint Manufacturers	.	.	.	221 to 229 Poplar.
Willson & Clous	.	.	.	.	.	.	.	.	.	Jewelers	.	.	.	524 Penn.
Willson, T. A. & Co.	.	.	.	.	.	.	.	.	.	Spectacle Manufacturers	.	.	.	201 Washington.
Winter & Goetz	.	.	.	.	.	.	.	.	.	{ Glove, Sheep, Calf, Kid and dealers in Wool	.	.	.	158 N. River.
Yeager, Chas. C.	.	.	.	.	.	.	.	.	.	Harness Manufacturer	.	.	.	37 N. Fifth.
Yeager, F. M.	.	.	.	.	.	.	.	.	.	Toys and Varieties	.	.	.	433 Penn.

FIRM, COMPANY AND INDIVIDUAL MEMBERSHIPS OF THE READING BOARD OF TRADE.--Continued.

NAME OF FIRM.	MEMBERS.	BUSINESS.	BUSINESS LOCATION.
Veich, Wm. R.	Grocer	133 Penn.
Yocom, Aaron,	Flour Mills	244 and 246 N. Eighth.
Yoder, D. A.	Wholesale Wines and Liquors	635 Penn.
Zieber, Geo. P.	Real Estate and Ins. Agent	60 S. Sixth.
Ziegler, P. M.	Druggist	526 Penn.

CONSTITUTION.

ARTICLE I.

TITLE.

The official title of this association shall be "THE BOARD OF TRADE OF READING, PA."

ARTICLE II.

OBJECTS.

The objects of this association shall be to promote the trade, commerce, manufactures and mechanic arts of this city ; to establish and maintain uniformity in commercial usages ; to inculcate principles of justice and equity in business ; to correct abuses ; to acquire and disseminate valuable commercial and statistical information ; to facilitate the adjustment of controversies in trade ; and in general to foster, protect and advance the interests of the business community.

ARTICLE III.

MEMBERS AND DUES.

Any respectable individual or firm engaged in business in this city, recommended by the Board of Directors, may become a member of this association upon payment of an annual fee of five dollars, for the year or part of a year ending December 31st, and agreeing to be governed by the rules and regulations of the association.

ARTICLE IV.

OFFICERS.

The officers of this association shall be a president, first and second Vice-Presidents, a Treasurer and eight Directors, who shall be elected annually by ballot, and all of whom shall constitute a board of twelve Directors, and shall hold office for one year, or until their successors are chosen.

ARTICLE V.

THE BOARD OF DIRECTORS.

SEC. 1. The Board of Directors shall meet for organization on the first Monday succeeding each annual election, or as soon thereafter as practicable, and at such other times as they may determine. The President, or one of the Vice-Presidents, and five members shall constitute a quorum.

SEC. 2. They shall have power to make by-laws, rules and regulations not inconsistent with this Constitution; to fill any vacancy in their number; to employ a Secretary; to print and circulate documents, and in general to supervise and conduct the business affairs of the association.

SEC. 3. There shall be appointed annually by the Board of Directors the following standing committees:

On Finances of the association, to consist of five members.

On Manufactures, to consist of seven members.

On Arbitration, to consist of five members.

On Transportation, to consist of five members.

On Statistics, to consist of five members.

On City affairs, to consist of five members.

In addition to these, the Board of Directors may appoint such other standing committees as they may deem necessary.

SEC. 4. At the annual meeting they shall lay before the association a report of the proceedings of the past year.

ARTICLE VI.

MEETINGS.

SEC. 1. This association shall hold its annual meeting on the fourth Thursday of January in each year, for the election of officers and for any other business.

SEC. 2. Quarterly meetings shall be held on the fourth Thursday of April, July and October in each year.

SEC. 3. The President may call special meetings whenever in his judgment they may be necessary; and it shall be his duty to do so when requested in writing by five members of the Board of Directors, or twenty members of the association.

SEC. 4. Twenty members present at any meeting shall constitute a quorum.

ARTICLE VII.

AMENDMENTS.

This Constitution may be altered or amended by a vote of two-thirds of the members present at any meeting of the association, provided that a written or printed notice containing such proposed amendment shall have been mailed to each member at least ten days prior to such meeting.

BY-LAWS
OF THE
BOARD OF DIRECTORS
OF
THE BOARD OF TRADE.
OF READING, PA.

SEC. 1. The stated meeting of the Board of Directors shall be held on the first Tuesday evening of every month, except July and August.

SEC. 2. Special meetings may be called by the President, or by the Secretary upon the written request of three members of the Board. The Secretary shall insert in the notice of such meetings the objects of the call, and no other business shall be transacted without the consent of all the members present.

SEC. 3. The President of The Board of Trade, or in his absence one of the Vice-Presidents, according to his seniority, shall preside at all meetings of the Board of Directors.

SEC. 4. The order of business at the stated meetings of the Board of Directors shall be as follows :

1. Roll call.
2. Reading minutes of the preceding meeting or meetings.
3. Communications to the Board of Directors or Board of Trade.
4. Reports of standing and special committees.
5. Unfinished business.
6. New business.

SEC. 5. The yeas and nays upon any question shall be called and entered upon the minutes at the request of any two members.

SEC. 6. Every member who speaks shall rise and address himself to the chair, and no member shall speak more than twice on the same subject without the permission of the Board. The pre-

siding officer shall decide all questions of order ; but any member may appeal from his decision, and if the appeal be seconded, the Board shall decide, but without debate.

SEC. 7. The Treasurer shall receive all the funds of the association, and shall disburse the same on orders drawn by the President and countersigned by the Secretary of the Board of Directors ; *Provided always*, That no order shall be drawn or given for any account which has not been passed at a meeting of the Board of Directors of the association. He shall prepare an annual account of the receipts and disbursements, which shall be audited by the Committee on Finance and laid before the Board of Directors at their stated meeting next preceding the annual meeting of the association. He shall report the balance in his hands whenever called upon by the President, or on application of the Board of Directors.

SEC. 8. The Board shall elect by ballot a Secretary, who shall hold his office at the pleasure of the Board. His duties shall be to give notice of all the meetings of the Board of Directors and of The Board of Trade, and to attend the same ; to keep the minutes of both Boards ; to conduct all correspondence not otherwise committed, and to keep copies and files of all letters sent or received ; to notify the members of their appointment on committees, and to furnish the chairman of each committee a copy of the resolution under which the committee is appointed, and a list of the members of the committee ; to furnish copies of all papers or documents on file, and to copy all papers relating to the business of either Board, when required by the President, or any of the officers ; to engross in books kept for that purpose the minutes of the Board of Directors and Board of Trade, and of the several standing or special committees ; to keep an alphabetical list of the members of The Board of Trade ; to collect all membership fees and dues of The Board of Trade and to pay the amount collected to the Treasurer ; to report to the Board of Directors at their stated meeting preceding the annual meeting of The Board of Trade the names of all members who may be in arrears two years—having first notified them that it is his duty to do so ; and to perform all such other duties as may be assigned him by the Boards, or by a standing or special committee.

SEC. 9. It is the duty of the Board of Directors to appoint the following standing committees at the first meeting after the election :

Committee on Finance, five members.

Committee on Manufactures, seven members.

Committee on Arbitration, five members.

Committee on Transportation, five members.

Committee of Statistics, five members.

Committee on City Affairs, five members.

These committees shall have supervision of the subjects indicated by their titles ; shall report from time to time thereon as they may deem of importance ; and shall also consider and report on such matters connected therewith as may be referred to them by the Board of Directors.

SEC. 10. Any member of the Board of Directors who shall be absent from three successive stated meetings thereof without leave, shall thereby forfeit his seat at the discretion of the Board, and it shall be the duty of the Secretary to report to the Board at each stated meeting the names of such absentees, and also when a member has been absent from two stated meetings to notify him of the provisions of this By-Laws.

SEC. 11. These By-Laws may be amended or altered upon propositions for the purpose, made in writing, at any stated meeting of the Board of Directors, and approved and adopted by two-thirds of the members present at the next or any subsequent stated meeting ; but notice shall be given by the Secretary, to each member of the Board, of the pendency of such propositions, on the call for each stated meeting until the same shall be finally disposed of.



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